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OF

AGRICULTURE AND HORTICULTURE.

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THE

AMERICAN FARMER:

DEVOTED TO

Agriculture, Horticulture, and Rural Economy.

[ESTABLISHED 1819.]

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

Sixth Series. BALTIMORE, AUGUST, 1869. Vol. IV.—No. 2.

AUGUST.

"Our groves were planted to console at noon
The pensive wanderer in their shades. At eve
The moonbeam sliding softly in between
The sleeping leaves, is all the light they wish,
Birds warbling all the music."

Work for the Month.

There is no season of the year when the farmer finds himself at liberty to cease from his labors, yet in this month, when even our hard-working school boys forego their books the farmer may have comparative leisure.—He may rest longer in the noonday shade, and shorten his afternoon task, and take even an occasional holiday. If his work is well up, the small grain is all in safety, the hay crop is secured, and the corn well worked, and what is chiefly to be done, need not be put under pressure. The oppressive heats plead rest and leisure, and he who has thus far faithfully done his work, may fairly claim a respite.

TOBACCO.

There is exception to be made as to this crop, if you have it. The mere cultivation of the ground, even with a full crop, is comparatively light work. But should an army of worms invade your field, there must be no leisure time till they are exterminated. They rest not, day nor night, and he who would contend with them must be very diligent by day at least. It very often is the case that these worms do comparatively little harm; that is, they are not sufficiently numerous to do a great deal of damage. Even then they disfigure the crop materially if not caught and destroyed. But if they come, as they often do, in battalions, a dozen or two to the plant, they make quick destruction when they get a few days' growth. It is easy to determine, by occasional inspection, when this evil is threatened, and it is prudent to take them in their earliest stages, so as to catch them where their first bite shows them. If by oversight or necessity this has been neglected, the most active operations are required to save the crop.

The crop is to be kept well stirred with the cultivator until the leaves so meet across the rows as to risk breaking them. Give a second hoeing, drawing the earth lightly to the plant, and lay the crop by entirely clear of grass.

As soon as there is enough in bloom to make a cutting, the work of topping must begin, breaking off all that are in bloom, or nearly so, to leaves measuring six inches. In about three weeks from the time of topping, it will be fit for the house. In the meantime suckers will start from the foot of each leaf, which must be carefully broken out before the tobacco is housed.

Let all due preparation be made in time for housing. See that you have on hand a sufficiency of sticks, have the houses cleaned of litter, and everything put in readiness, that there be no impediment to this important work.

POTATOES.

Continue to work frequently the late potatoes till they come into full bloom, and then lay them by, entirely clear of grass.

RUTA BAGA AND WHITE TURNIPS.

The former of these should have been sown something before this, but may still be sown very advantageously, if the ground be moist enough to bring them up quickly. It is needless to sow the seed when the ground is very dry; they fail to germinate, or the fly destroys the young plants as soon as they appear.—The different varieties of white turnip may be sown at any time up to the 20th of the month, but it is better not to postpone to the latest period. To get a large crop, sow at any time the first, and to have them of good quality, let the earth be rich enough to force them.

RYE.

Rye for any purpose should be sown by the first of September. The ground must be in readiness in the meantime. This crop is not much prized in Maryland as a grain crop, but a lot of it for early spring feeding cut green, is very desirable. It comes in for use long before clover or other green feed. Make the ground rich and sow two bushels of seed, if intended for cutting; if for grain, one bushel is quite enough.

TIMOTHY.

If a grass lot is to be sown with timothy, let it be got in readiness for sowing by the first of September. In this case, if well prepared and manured, a good crop may be expected the following season. Remuneration for the cost of preparing and manuring ground is found by sowing on the same ground a lot of white turnip seed. It is to be sown very thinly by the 20th of the month. When the turnips are well up, sow the timothy, a peck of well cleaned seed to the acre, and run over with a light harrow, and the hoes to thin them well. This working will set the timothy well, and give a good crop next season, with a paying crop of turnips this fall.

The best general method of growing timothy, however, is in a rotation of grain crops. In that case, it is to be sown on the soft surface of the grain field immediately after the wheat is sown.

WHEAT FALLOW.

The preparation of wheat fallow should be made now, as fast as may be practicable.—When the ground may be in order for ploughing, this work should have precedence of all else on a grain farm. First because of the necessity of having the ground in readiness in time for early seeding, and because of the probability of its getting too hard; and then because in the opinions of practical men there is much advantage in having the soil well settled and compacted before seeding time.

Where there is a good dry subsoil, break up well to the depth of eight inches. If there are yard manures to be applied, put them on after ploughing, and spread immediately from the wagons.

MANURES.

As this is the season when it is common on grain farms to haul out the bulk of manures from the farm-yard, we hope that whether intended for the wheat field or the next year's crop, the practice of ploughing under at once, or of leaving in heaps on the field, will be given up. If oat stubble is to be manured, let it be ploughed first, and the manure then hauled and spread from the wagon to lie till seeding time, as above recommended for the clover fallow.

This is a proper time to gather up all the available manure from every source, which, if not wanted on the wheat crop, should be spread on the corn or tobacco field of next year.

THRESHING.

The grain threshing should be done as early after harvest as may be practicable, in order that advantage may be taken of the market, to sell when it is likely to bring the best price. Let special care be taken to guard against the many dangerous accidents which frequently occur in threshing. Let the platform for the driver be made perfectly secure, and see that the feeder runs in no danger of having his hands mangled by the teeth of the machine. The master's eye should give this work the closest inspection.

CATTLE PENS.

Cattle do better at this season penned on the fields, the pens being removed at stated times. Much ground may be manured in this way, and the cattle profit by the change from the yard. If it be found more convenient to pen in the yards, provide them with abundant litter. The pens in the fields are not to be ploughed on removal, as many think desirable. They are much better let alone. If they could be covered with coarse litter of any kind, much more ground might be manured in the same time.

BUSHES AND WEEDS.

Pasture grounds are very liable to ripen seeds of weeds, and allow briars and bushes to propagate. This is a good season to destroy them. If the weeds are not destroyed early, even before the seeds are formed, it is better to throw in heaps and burn them.

SALT FOR STOCK.

It is well for stock of every kind to have rock salt in the pasture that they can take at will, otherwise it should be given them regularly once a week.

The Vegetable Garden.

AUGUST.

Asparagus Beds.—Keep these clean. Especially should beds of young plants be kept in good order.

Beans.—Early sorts of Kidney beans may now be planted for fall use. They may be kept for winter use, it is said, in brine, and be as good as when fresh.

Celery.—This should have been planted and growing by this time, but may still be planted if good, stocky plants are to be had. Water freely after planting, and encourage their growth as much as possible. That which has been some time growing should be earthed up every ten days, being careful in doing so to avoid smothering the bud.

Coleworts, Borecole, Savoys.—Plant Savoys two feet each way. Early Yorks may be planted for use in the fall as Coleworts. Plant Borecole.

Radish.—Sow seed now, and occasionally for fall use. They may be very well sowed among turnips.

Lettuce.—Sow Brown Dutch and Silesian lettuce seed for fall use. About the last of the month sow seeds of the hardy sorts, to plant in cold frames, or warmer borders for winter and spring.

Spinage.—Sow now a small crop of spinage for fall use, and prepare to sow about first of September for early spring use.

Small Salading.—Lettuce, radish, cresses, mustard, &c., may be sown occasionally for small salading.

Turnips.—Sow white turnips now for early use, and two weeks later for principal crop.

Green Peas—For use in October, may now be sown.

Growing Crops.—Keep these in the best growing order, and free from grass.

Herbs.—Garden herbs now in flower should be cut and dried in shade.

Compost.—Gather materials from every source for compost. Some of the best are soapsuds, slops from the kitchen and house, which are frequently thrown out, where they make filth and are wasted.

The Fruit Garden.

Support for Trees.—Heavily laden fruit trees should be well supported in time with substantial stakes, to which the limbs should be bound with strong bands of hay, carefully placed between the stake and the limb, to prevent rubbing.

Vines.—Keep vines well trained and tied up, and the ground entirely clear of weeds, that the fruit may have the full benefit of the reflection from the bare surface.

Injured Trees.—Trees which are cankered, or show much gum, should have the decayed part cut out clean to the sound wood, and covered with some preparation to exclude air, and allow it to heal.

Budding.—Peaches, almonds, apricots, nectarines, and other stone fruits, may be budded this month.

Stones of Fruit.—Save stones of all stone fruit, for seedlings. They should not be dried, but thrown into a box with some earth. The drying retards the germination of many seeds, or prevents it altogether.

Seedling—Should be kept free from grass and weeds, and the soil loose.

Fall Planting.—The ground intended for fall planting should be got in order whenever it is found convenient to do it. It is better to plant in ground that has been encircled for a previous crop, and has been worked through the season.

Trees Newly Budded.—The bandage on newly budded trees should be loosened in three or four weeks. Such as have been grafted or budded heretofore, should have all shoots below the bud and graft rubbed off.

The farmer must practice one of three methods to keep vegetable mold in his fields—use a great deal of straw and other vegetable refuse in his stock yards; haul many loads of swamp muck; or plough in clover once in three or four years. The last way is the cheapest.

The Flower Garden.

Crysanthemums.—Give these attention to insure good bloom. Give them neat stakes if needed, and from those in pots, remove an inch of the earth and replace with rich compost.

Bedding Plants—as Verbenas, Heliotropes, Geraniums, &c., can only be kept in good order by constant attention—removing seed vessels, dead leaves, and rank growing shoots. Towards the end of the month, cuttings of any of the above named plants, and of others that may be required for keeping through the winter, may be rooted in a shady place out of doors.

Annuals.—There are many hardy kinds, that may be sown the last of the month, that will stand the winter, and bloom early in spring, as Rocket, Larkspur, Convolvulus Minor, &c.

Hollyhocks—need water, if the weather be dry, to make them open well.

Lilies.—When the hardy kinds are done blooming, they should be taken up and offsets removed, and the large plants put in again at once where they are to bloom next year.

Herbaceous Plants—which are past blooming, may be divided, and many desirable kinds may be raised from seed for blooming next year.

For the "American Farmer."

Abortion in Mares and Cows.

ALEXANDRIA, VA., July 7, 1869.

MR. EDITOR: In your July number of the *American Farmer* I find some remarks on "Stagnant water causing abortion in cows and mares." It is surprising to notice how people will catch at an idea without further investigation. Generally stagnant water, but also rotten food will produce abortion in most cases, but *neither* stagnant water *nor* rotten food are the causes where abortion appears as an *epidemic*. The real cause for epidemic abortion has not yet been found out. Abortion is, of course, a very unpleasant thing, but where it is not epidemic, the causes are mostly carelessness in some way or other. By reading the remarks on this subject in your July number, people might be brought to believe that "stagnant water" is the only or principal cause for abortion.

Yours truly, L. A. HANSEN.

For the "American Farmer."

Silk Culture.

MR. EDITOR: Although silk culture is very limited in our vicinity, still in some localities further South, and particularly in California, it is beginning to be an important branch of industry. Having in my travels remained for a season in Southern France, to study the culture of the silk-worm, I give you my experience in these lines. If not generally useful to your readers, it may prove of advantage to some, and perhaps encourage such who have the desire, but not the knowledge, to start the business.

THE MULBERRY TREE.

As mulberry leaves are the food of the silk-worm, the first thing to be done is to provide the leaves required. There are two kinds, the black mulberry (morus nigra), and the white mulberry (morus alba.) The best mode of propagation is through *seed*. This is sowed in rich, light soil, neither exposed to drought nor excessive moisture, but where, at the same time, both sun and air have free access. Here they remain for one year; next year they are transplanted to the nursery, where they remain until the fourth year. From thence they are transplanted to the place which they have to occupy for the balance of their existence. They are grafted like fruit trees, the stem being cut about three inches from the ground. The first year all the limbs are left on the tree; the second year they are cut back *some*, and in the third year they are cut away entirely, that is, all limbs on the stem. To form a crown, the top limbs are cut so as to form a crown of about one foot in diameter. All limbs inclining inwards, and such as have a straight upward tendency, are cut away. It is desirable to have the holes for planting dug in the fall, so that they may be exposed to the atmosphere during the winter. In planting, the tap root has to be cut back *well*, and the roots covered with rich soil, the subsoil of the holes to be placed on top. *Particular* care has to be taken *not* to plant the trees deeper than they have been in the nursery. After planting, water with two or three buckets of water. In future the trees have to be pruned WELL every three or four years. The location of the mulberry tree plantation has to be on *dry* but *rich* soil, well protected against cold winds. The white mulberry is the most extensively cultivated,

as it produces its leaves earlier than the black. The proper proportion is to have two-thirds white and one-third black. The mulberry trees are grown in two different shapes, as dwarf and tall standards. The dwarf trees have the advantage that they put out their leaves earlier and require less space, from 8 to 10 feet square, whereas the tall trees must have 20 feet square. The theory has been advanced, that the mulberry tree ought not to be stripped of its leaves every year, as it would kill the trees. But such is not the case. In France they are stripped every year without any injury. It is considered disadvantageous to the trees to crop the land on which they stand, but the soil is stirred by ploughing, where it can be done, three or four times during the summer. In ploughing, great care has to be taken not to injure the bark of the trees. Mostly the leaves of grafted trees are used for the feed of the silk-worm, as they produce from three to four times more leaves; but also ungrafted trees are kept in such a number as to provide the worms with food for their first two periods of existence The reason is, that the leaves of the ungrafted trees are finer and healthier for the worms. A mulberry tree 18 to 20 years old produces 100 pounds of leaves.

QUANTITY OF FEED AND SPACE REQUIRED.

One ounce of eggs produce 10,000 silk-worms, which require 2000 pounds of leaves and 200 square feet of space.

BUILDING USED FOR RAISING AND FEEDING SILKWORMS.

The best shape of building to be used for silk-worms is an oblong square. The building must be located high and free, exposed to the influence of the sun and air. There must be a basement for the storage of leaves. There ought to be as many windows as possible, provided with shutters, to avert sun and light in daytime, both of which are very injurious to silk-worms, and protect them against cold in the night. Under each window there has to be an opening, one foot square, provided with a shutter. As these openings are intended for the renewal of the air, similar openings are made in the ceiling. There must also be several fireplaces; in a moderate sized room, one in each corner; in a larger one, two more in the middle. For the accommodation of the silk-worms, scaffolds are erected with boards 15 inches apart, one above the other, (hurdles.) For the worms to go into when they want to spin, fine brush is placed in rows, tunnel shaped, 15 inches in diameter. The prosperity of the silk-worm depends as much on the good air in their rooms as on the feed. The air is in good condition if without smell, dry and in proper temperature. The moisture of the air occasioned by their respiration, evaporation of the leaves and their excrement, is discovered by a hygrometer. For this purpose one is placed in the room, and another one in free air in a shady place, protected from rain. If the hygrometer in the room indicates more than 65° it is time to improve the air. This is best done by lighting a fire in the fireplaces and at the same time open the top windows on one side and the shutters of the openings below the windows on the other side. To moderate the draught, there are frames, covered with coarse fabric, inside the windows. On many places they use oiled paper instead of glass.

BREEDING OF THE SILK-WORM.

For breeding, such worms are chosen which are hard on both ends. Although it is no certain mark, still experience has proved that the females are generally more full and round in the middle, whereas the males are a little impressed. The cocoons have to be kept in a temperature of from 15 to 18° Reaumer.—When the butterfly is ready to creep out of the cocoon, it wets the web with a moisture from its mouth, which facilitates the breaking through. The breaking through the web occupies two weeks by a temperature of 15° R.; at a higher temperature it takes place sooner. As soon as the butterflies have come out, they are placed by the hand on a table, covered with fine linen. The room where the coition and laying of the eggs takes place, must be cool and half-dark. A cellar or basement is best. Light worries and weakens them.—They also live longer and lay more and stronger eggs in a cool and shady place. The males are recognized by their quick movements on the table and the continual motion of their wings,

L. A. HANSEN.

Clifton, Fairfax Co., Va., July, 1869.

(To be continued.)

There is no man but hath a soul; and, if he will carefully attend to that, he need not complain for want of business.

For the "American Farmer."

Agriculture versus Manufactures.

MR. EDITOR: Under the above heading we find an article in the *Southern Argus*, Selma, Ala. We acknowledge our gratification in seeing similar sentiments expressed. It is only a wonder to us that it occurs so seldom.

The article says: "We are an agricultural people, *par excellence*, and neither manufacturing nor mining can ever be made the leading pursuit of our people. The three essentials to success are cheap power, cheap labor, and cheap transportation." If we acknowledge that the first of these factors, cheap power, is abundant in the South, we cannot deny that cheap labor and cheap transportation are "non est," and never will be. One reason why such is the case is, simply, that our climate is not agreeable to white emigrants—that is, for such who have not been brought up to it. Another reason is, that *our* people can make as much, and more, by planting cotton, rice, sugar and tobacco, and at the same time enjoy independence.—The operatives of a manufactory are always the slaves of their employer. They only understand *such* work, and have to submit to the rules and regulations laid down by the proprietor, if they desire to retain their work. To what extent such is the case we can see every day by examining the status of the English manufacturing districts. You may reply, that such is not the case in the New England States, and you are partially right, but I beg you to consider that the state of manufactures there is "*far from* NORMAL." Through a most *unjust* and *injurious* system of *protective tariffs*, these manufactories are supported and their proprietors enriched at the expense of *all the consuming* citizens of the whole United States. These proprietors have mostly to pay a fair compensation to their operatives in order to retain them. As soon as the emigration of artisans from England (which has just now fairly started) shall take such dimensions as to allow it, the manufacturers will lower the wages of their operatives and grind them down as low as possible, thereby reaping the *whole* profits of the protective tariff. Manufactories are a good thing for a densely populated country, where otherwise no sufficient employment can be found for all the labor, but in a country like ours, where millions of acres of fertile land lies waste, and only awaits labor to repay for its application a *hundred fold*, it is a *folly*, a *miserable* policy to enforce manufacturing. The produce of the soil is an ABSOLUTE necessity for existence, which has to be bought and consumed, whereas the produce of manufactures mostly may be put down as *luxuries*.

Go to Europe, where the experiment of protective tariffs has been tried and abandoned ninety times out of a hundred—show me a country where manufactories are nursed by protection, and I will show you a retrograde country, with miserable finances and a vast pauper population. If our manufactories cannot exist without protection, let them disappear from the face of the earth as soon as possible. The money and labor employed in them can find compensating employment in producing bread and meat, not for our country alone, but for the world! Let the prices of our produce go down one hundred per centum and more, and still we will make more than we are making now, because, "through *free trade*, we will be enabled to procure our necessities for a corresponding price." I have "no ax to grind," Mr. Editor, but speak by the experience I have gained by thirty-five years' observation, both here and in other countries. L. A. HANSEN.

Clifton, Fairfax Co., Va., June, 1869.

THE DRAGON FLIES.—Every one is more or less familiar with what are commonly called "Devil's Darning Needles." There are many species of them, some very beautiful in color and graceful in flight. They are all voracious, and occupy the place among insects that hawks and eagles do among birds. But formidable as they are among the minute beings that annoy and encroach upon the interests of mankind, they are perfectly harmless to man himself. They eat mosquitoes by the million. Thay are, in fact, all useful, destroying a vast number of gnats and other troublesome and destructive insects. If you shut up a dragon fly for a short time in the house, he will destroy vast numbers of mosquitoes, house flies, and other flying insects, if there are any, just as a few toads in a room will rid it of bed-bugs, cockroaches, and other similar vermin. Never injure or destroy these light and airy creatures, therefore. They do good, and not harm. They are your friends, and not your enemies. The lace-winged flies generally are beneficial.—*Mass. Ploughman.*

Trout Culture.

Every landholder who has at his disposal a spring of pure soft water, may breed trout with less difficulty and at less expense than poultry, and among all rural pursuits we can not imagine one more engaging and delightful. We have in our mind's eye some of those lovely residences back of Baltimore, abounding in fine springs, such as James McGuire's place, Wilton, on Elk Ridge, (where, by the way, trout breeding has already commenced), Brooklandwood, Green Spring, Hunting Ridge and others, where fish culture should become not only fashionable but profitable. With the permission of the author we transcribe from Mr. Genio Scott's recent work on fishing, the following general directions, by Mr. Seth Green:—*Turf, Field, and Farm.*

"GENERAL DIRECTIONS," BY SETH GREEN.

For the general management in propagating salmon and trout, and the transportation of fecundated ova and the alevins, the following advice, founded upon successful experiment and entirely reliable, may be read with interest by those who are able to commence fish-culture by artificial assistance:

"Build your ponds according to the amount of water you have. If you have but little, build small. The water should be changed every 24 or 48 hours, and the oftener it changes the better. The trout can be very plenty if they have sufficient fresh water and food.

"I can send ova a fifty days' journey packed in a box with moss. I place the moss in a tin pail, filled with sawdust, so that the spawn will not feel the changes of heat and cold.

"*Direction for handling the Spawn.*—Pick the moss carefully off from the top of the spawn. Then put the box in a pan of water and turn it nearly bottom-side up, and pick the moss out carefully. The spawn will sink to the bottom, and you can pick the moss out of the pan. If there is a little left it will do no harm. Then pour the spawn in your hatching-trough by holding the edge of your pan under water, and 'place' them, without touching the spawn, by agitating the water with the bearded end of a feather. The dead span will turn a milk-white color, and should be picked out. Your trough should be so arranged that the water will run in it about twelve feet per minute. The water should be filtered by running through gravel or cloth screens, to prevent the sediment from reaching the spawn. I run about one inch of water over my spawn, and if any sediment gets on them and is allowed to remain there long, it will surely kill them. Remove all sediment with the bearded end of a quill by agitating the water, without touching the spawn.

"Large ponds with but little water get too warm in summer and too cold in winter for trout to do well. It is detrimental to have any other fish with trout. Any kind of fish or fish-spawn is good for feed. The young should be fed twice per day, very slowly; if fed fast, the feed sinks and befouls the trough and the trout will sicken and die. If fed regularly and the trough kept clean, with a good change of water, and not kept too thick, they will live and do well. If neglected they will surely die.

"*What is Death to Spawn.*—The sun, sediment, rats, mice, snails, crawfish, and many water insects.

"My troughs are 25 feet long and 15 inches wide. The water that feeds each trough would go through a half-inch hole with a three-inch head. Use fine gravel that has no iron rust in it. My troughs are three inches higher at the head. The average temperature of the water is 45 degrees, and the fish hatch in 70 days. Every degree colder or warmer will make about six days difference in hatching. Trout hatch the soonest in warm water. The sack on their bellies sustains them for 40 or 45 days after hatching; then they need food.

"When the fish are hatched, raise the water in the troughs about four or five inches by putting on a piece of board of that width on every cross piece, thus keeping the fish separate—about an equal number in each square. If you have small streams of shallow water near the head of your pond, put a few in a place in the stream and pond, and they will take care of themselves better than you can. The object of distributing them is that they will get more food. All old streams and ponds have plenty of food for small trout and large, which you will find by examining the moss, sticks, and stones in your ponds and streams, as they are full of water-insects.

"The fish, after hatching, should be fed twice daily for two or three months, then once a day—the grown fish once a day or oftener. For the young fish, liver should be scraped and chopped very fine, and mixed with water, to give it about the consistency of clotted blood. Toss this to the fish a little at

a time, so that they can catch and devour it before it reaches the bottom of the trough; no more should be given than the fish will eat, because if any is left it will settled on the bottom and foul the water, and the fish will sicken and die. The fish may be fed on curds, fish offal, or other animal matter, provided it be small enough for them to swallow."

EVERY FARMER SHOULD HAVE A TROUT PRESERVE.

From a perusal of the foregoing descriptions for breeding salmon and trout by the most celebrated and successful fishculturists, it will be perceived that they do not differ much in the *modus operandi*. Nearly every farmer has a spring on his place yielding surplus water sufficient to hatch trout in boxes. If he does not wish to go to much expense in erecting a dam to form a preserve, he might at least hatch the trout in boxes and sell them, for they are as ready sale as any product of a farm. Mr. Ainsworth, of Bloomfield, N. Y., said: "The original stock (of trout) was put in my pond, containing sixty-one square rods of ground, fourteen feet deep, supplied with springs, three years ago, fourteen hundred in number, age from one to four years. They weigh now from one to three pounds each. They are about as tame as kittens—come at call, and show themselves clear out of water in their haste for food by the five hundred at a time, and some take it out of a spoon six inches above the water. Think of seeing five hundred trout all at the same instant, weighing from one to three pounds and from twelve to eighteen inches long!"

A two-pound trout will furnish about eight thousand spawn, smaller ones less in proportion. They commence spawning when one year old.

In this way they can be increased and grown to any extent, and all the ponds and streams in the country stocked to overflowing.

We conclude with the statement of both hope and confidence that the reader will find fish-breeding in boxes so simple and sure that he will at once prepare to engage in the interesting and profitable occupation. .

When a ton of wheat is marketed, it leaves nothing behind but five dollars worth of straw. When a ton of meat is marketed, it leaves behind it nine-tenths of the manurial value of the food consumed in making it.

Butter Making.

Among the various branches of husbandry in various sections of the North dairying is considered the most profitable. But large numbers are kept from engaging in it, and others have been obliged to give it up, because their women are unable to perform the labor connected therewith.

This objection might be obviated in a great measure by a more general attention to the manufacture of butter, by a broader liberality in procuring proper conveniences and utensils, and by better information as to the best modes of preserving its good qualities, any many thousands of dollars be added to the aggregate annual profits of our American dairies.

There is not, within the whole range of agriculture, any other product of equal value that is liable to so large a per cent. of depreciation as butter, resulting mainly, or wholly, from lack of care and skill in manufacture, or from want of a proper place and suitable utensils for its preservation.

Such being the case, it becomes a fair subject of inquiry, and I wish to propound the following questions: Where and how long shall we keep the milk, and shall we churn the whole of it, or only the cream that we skimmed off? In either case, shall we churn when it is sweet, or wait till it is sour?—Then, after churning, how shall we separate the butter from the buttermilk? Shall it be washed, or shall it not? What kind and quantity of salt are required for a pound of butter? What are the most convenient, effectual and best utensils for each and every operation? And, finally, what are the causes of so large an amount of butter losing its sweetness, or why is so much made that never had any?

Now, I will endeavor to answer some of these questions, and to give my reasons for my way of working butter.

In the first place, I claim that, for several reasons, butter should be always washed, but it should be done with great care, for when first churned and fresh the globules are very tender, and liable to be broken, as they almost always are when the buttermilk is worked out without washing. But it must all be got out some way, or the butter will not keep nor be sweet. According to my experience this can be done most easily and effectually by the judicious use of water.

I will not go into the details of churning, but must say that it is impossible to produce prime butter when it comes out of the churn salvy. It always should be in globules or particles at least as coarse as mustard seed, and not hardly stuck together. Remove it directly from the churn into cool water. It will float apart so that the water will come in contact with most of the milk, and separate it from the butter. In the operation of taking it out of the churn, gather it gently with a wooden ladle, pressing the mass slightly together, and pour off the water. But be careful not to work it too much, as there is more butter injured by being worked too much and improperly, than by not being worked enough. Add a little salt, which will help to extract the milk, and toughen the grain of the butter; then put on more water, and work it a little by pressing lightly and turning it over; at all times avoid, as far as possible, all friction, for that will make butter salvy; and when once salvy, no after treatment can restore it. Butter should never be allowed to come in contact with any person's hands, for they will make it oily and sticky, even in cold weather, and with the utmost care. The water should now be drained off, and at least one ounce of fine Ashton salt added to a pound of butter, if intended for long keeping. It should be worked this time only just enough to mix in the salt. Set it in a cool place, for a short time, where it will harden, and a portion of the salt dissolve, when it may be worked a little more, mixing the fresh and salted portions together; then drain it again and allow it to stand until the next morning, when it will be firm and yellow. Then it should be worked until it is a uniform mass, and until there is no buttermilk in the pickle, or brine, which the salt has made. It will now be in condition for packing or for the market. When properly manufactured and packed, butter can be kept for years in good preservation.—*New England Farmer.*

A Maine man gives his method of treating baulky horses as follows: "Let me inform humane men and hostlers, and all who hold the rein, that the way to cure baulky horses is to take them from the carriage and whirl them rapidly round till they are giddy. It requires two men to accomplish this, one at the horse's tail. Don't let him step out. Hold him to the smallest possible circle. One dose will often cure him; two doses are final with the worst horse that ever refused to stir."

Hydrophobia.

An Antidote for the Bites of Rabid Dogs, Serpents, &c.

[From a New York Paper.]

Observing that the dreadful malady hydrophobia has become somewhat prevalent, and in many cases fatal in New York and vicinity, and that the public are becoming alarmed, I beg to acquaint you that there is a remedy, which, as far as I know, has never failed.

It has been used successfully as an antidote for hydrophobia, snake bites and the bites of centipedes, scorpions, adders and other poisonous animals. It is so efficacious that it has been adopted by the Governments of India, New South Wales, Victoria, Tasmania, Queensland, South Australia, &c., and introduced by me successfully in Egypt. The remedy is under control of the Governments above mentioned, and administered by duly authorized and qualified physicians, and being no secret, and well known to my brethren of the medical profession, I have much pleasure in making it public. Its administration, mainly depending upon the age, constitution, habits, &c., of the victim, must be carefully effected, otherwise, instead of doing good, it would be attended with the most disastrous consequences:

Remedy—Liquor ammoniæ fortis.

Dose—For an adult, thirty-five drops in a wineglassful of water; twelve to fifteen years old, twenty to twenty-five drops in a tablespoonful of water; eight to twelve years old, fifteen to twenty drops in a dessert spoonful of water; four to eight years old, five to ten drops in a dessert spoonful of water.

JOHN JAMIESON, M. D.,
No. 64 Broadway, N. York, March 3, 1869.

A TWENTY ACRE COTTON CROP.—In the June Cultivator, Mr. David Dickson says:

The 3d of May I commenced the twenty acre lot and finished the 10th of May; commenced planting the 7th of May; turned under a fine coat of green manure; used 800 pounds of my compound per acre. It made 32 bales, the last one being a bag and a half, and paid a dividend on $4000 per acre, after paying all expenses and improving the capital ten per cent. on what it would sell for. But as I wish to be fair, I will state the sale of the seed increased the net dividends two-thirds or more, but the lint alone paid a net dividend on $1000 or more per acre.

Profit of Keeping Sheep.

Twenty-five or thirty years ago, when I was a boy, there were very few sheep kept in this part of Chester county, Pa., compared with the last five or ten. Farmers generally thought they were poisonous to the land. Thirty years ago, farmers would buy eight or ten ewes in the fall, and keep them over a year or more, for the purpose of getting the wool for manufacturing use in their families, but with no idea of positive pecuniary profit.

My father went into sheep keeping more extensively. He generally bought twenty-five or thirty ewes in the fall, and put a good buck among them about the first of October, so as to have them lamb in March.

It was part of my work to take care of these sheep in winter and spring; but after they were turned out to pasture, there was very little care taken of them. We had a large tract of woodland, that was low and marshy, which I think is not the place for sheep; they were turned there in the spring, and hardly allowed to look into a field the whole summer.

Within ten or twelve years, I have generally bought from fifty to seventy ewes, of the common stock, in the fall, and kept a good buck to put with them. I may as well mention here, that I have tried most all of the improved breeds of stock, and think the Southdown the best for my purpose, as the lambs are ready for market earlier than any others. As a general rule, in buying sheep, I select pretty good wooled ones, about one-fourth Merino, as I think they are the best sucklers and make the fattest lambs. After the lambs are taken off, the ewes get ready for market earlier than coarse or open wooled sheep. I sell all my sheep except the buck every year, and buy in a new lot.

Twelve or fourteen years ago I bought some adjoining land, of which about ten acres were new land, partly cleared. I fenced it off and cut the timber and cleared it up, by cutting away the briars and rubbish. Part of it was thin land. I plastered it, and pastured it with sheep for about ten years, and at the end of that time I think it was as fine a "green grass" sod as I have ever seen. In the spring of 1858 I ploughed it and planted it to corn. In the fall, the Chester County Agricultural Society offered a premium for the best five acres, and also for the best one acre of corn. I had been called upon by one of my neighbors to help measure some corn, of which he had a very good crop, for the purpose of competing for the premium. I happened to speak of it before my men, when they said we had a larger crop than that. They took a barrel out the next day and measured some heaps, and told me the result. I called on two of my neighbors, and after carefully measuring it, they made out the following report: "The best one acre yielded 104 bushels of shelled corn; the best five acres yielded 95 bushels per acre;" for which I received the first premium.

I think it was owing to its being pastured with sheep, as it never had any manure on it except the plaster. While speaking of this land I may as well mention that it was entirely out of sight of the buildings, and I never bring in sheep at night on account of the dogs. My neighbor's sheep, which were in the adjoining field, were frequently attacked by dogs, but mine were never disturbed. I have had but two sheep killed by dogs for ten years. I think the reason of it is that I put a number of bells on them, from two to three dozen in a flock.

Some farmers pasture the land very closely with cattle before turning their sheep on it. The consequence is a bare field; but if you let the grass get up, and do not permit it to be eaten off by cattle or horses first, I think sheep are no harder on grass than other stock. The spring of the year is the most difficult time to keep them from eating down the grass. It is a great advantage for ewes that have lambs to have grass early.

I frequently let them run in my wheat field in winter and early spring, to save the grass fields. I keep them as long as I can on the field I intend to plant with corn that season, not ploughing it until late in April. I have not missed having a good crop since I have adopted this plan, and have never had my corn injured to any extent with cut worms or insects. I don't think it would be profitable for farmers to stock their farms altogether with sheep, on account of the resulting manure. Although sheep make the very best manure, it is difficult to work up straw and cornstalks without some cattle.

I keep my sheep all together in a good, dry, airy place in winter, keeping them in at nights, and when it is stormy, but letting them run out in good weather. About the first of March, when they commence lambing,

I take out the ewes that have lambs, and put them in a separate enclosure, making a pen in one corner for the lambs to go in and eat meal, which they will do when they are three weeks old.—*Germantown Telegrhph.*

A Word for the Sheep.

Regarding the flock as indispensable to comfort on the farm, it has occurred to me to publish an account current, as nearly as I can recollect, of our flock of sheep, averaging fifty head during four years. It may interest some who are not tired of sheep, and may encourage others who are neglecting the few sheep they may have, with the view of abandoning the flock altogether. I think the items to the creditor side of the flock not liberal enough for services rendered. Their fare was rather meagre during winter, and their shelter only during the worst weather. Their services among the briars robbed them of one-fourth of their wool, and upon the whole they have had a pretty hard time, and yet the figures will show that they make a handsomer account current than almost any description of investment that can be started.

Flock of 50 Head of Sheep, in account with J. C. McC., during four years.

Dr.

To cash paid for 20 sheep, at $5	$100
" 18 l ng wool ewes, at $8	144
" shearing an average of 50 sheep, at 10 cents per head per annum during four years	20
To 100 shocks of fodder per annum, at 15 cents, or its equivalent in hay and oats	60
To 25 bushels corn per annum, at 60 cts. per bushel, average	60
To 20 bushels wheat tailings, at 50 cts or its equivalent in shelled oats	40
To summer pasture, at 25 cents per head	50
	$474

Cr.

By average of 200 lbs. washed wool per annum, at 30 cents per lb	$400
By 50 head wethers, sold at $6	120
By sale 12 head, at $6	72
By average of 10 head per annum, dressed for family use, at $5 per head	200
By services rendered in the destruction of briars and foul weeds, 50 cents per head per annum	100
By services rendered in producing and scattering manure and setting grass seed, at 50 cents per head per annum	100
By stock on hand at this date, 50 sheep, at $4 per head	200
By 30 lambs, at $2 per head	60
	$1252
	474
Balance to credit of sheep	768

By proper management this amount can be doubled, as our loss of lambs has been very heavy from being dropped in cold weather, without proper shelter. Our loss from dogs has been considerable, and our loss from allowing ewes heavy with lamb to be among horned cattle at foddering, has been very great, but perhaps not greater than allowing them to get into hogs' pens at night with the fatting hogs, from carelessly leaving the gaps too low. The ewes would get such a surfeit of corn as to kill them in a few hours. I have not calculated an interest account on original investment and subsequent expense, as by crediting the flock with interest on profits, the balance of interest would be in their favor, just in proportion to the balance of account.—*Cor. Country Gent.*

Fence or no Fence.

This is a question fast becoming a subject of serious reflection, and one of vital importance to the Western farmer. The cost of building and maintaining fences amounts to nearly the price paid for the land, which is a serious drawback to the settling of the vast prairies of our Western States.

We will suppose that a substantial fence, with the necessary repairs, will last fifteen years, at a moderate expense of one dollar per rod. With this for a basis, it would cost the State of Iowa to inclose its area into eighty acre farms, after allowing four rods in width on all section lines for public roads, a sum approximating one hundred and twenty-nine millions of dollars for fence alone every fifteen years.

If this question were kept in agitation as much as some others, of less real importance to the body agricultural, we should ere long be blessed with statutory protection from all kinds of stock, and farmers would have a shorter road to competence and the State to agricultural wealth.

When it costs so much to fence whole farms, and so little comparatively to inclose pastures, should not the whole agricultural population arise as one man, and demand protection from stock by law, enabling us to dispense with the labor and expense of fencing out our neighbor's cattle, and permitting us to expend the same on beautifying our homes and enriching our minds and soils, besides the gratification of preserving our woods and groves of timber for purposes that are absolutely essential?

Of course there are men that would be opposed to the passage of such a law, but we believe the friend of the poor man and of general improvement will ever be found advocating the right side of the no-fence question.—*Exchange.*

Cattle Feeding.

A writer in the Rural American, makes the following comparison between cooking and not cooking the food of cattle:

We have a *Western* way of feeding cattle that to my mind is costly enough. But the principal cost is in the *quantity* of food that is consumed; 50 to 60 bushels of corn is required to fat one steer. A considerable portion of this seems to be lost so far as the steer is concerned, for it passes off whole, or apparently so. And this difficulty is the same whether we feed high or low. A portion of the grain passed off, whether we are feeding for beef or simply to bring them through the winter. Corn and cob crushers have been used to some extent, and they prove a partial saving at least, but a portion still passes away undigested, and of course unappropriated. But these things have been for the most part abandoned, costing more in time and labor than they save. The usual mode is to feed in troughs, and keep a sufficient number of hogs with the cattle to consume the waste. Where corn is fed in the ear, either whole or broken, two hogs are needed for one steer; and where the corn is crushed or ground coarse, one hog, though I incline to the opinion that one hog is too much in the latter case. Where ear corn is fed, a small quantity of hay or good straw is necessary. Where cattle and hogs are fed together, the hogs improve very fast and come into market in fine condition. So do the cattle, and no food is wasted. One hand is allotted to every hundred head of cattle, and of course two hundred hogs. The feeding is mostly in open lots, wherever a supply of corn can be had. Where the shelter of trees or bushes can be had it is better, but this is seldom practicable. Good sheds would undoubtedly give more and better beef at less cost; but as the stock is frequently moved from one place to another, so as to be convenient to corn, they are hardly practicable. This is the way cattle are fatted in the West, and we can arrive at very nearly the exact cost of feeding 100 head. We will take the largest estimate of corn, 60 bushels each, at 40 cents, say $2,400; 10 tons of hay, say $100. One hand four months $100 more, and if he used an extra team we may add $50 more, making $2,650. Now, 200 hogs weighing 100 each would gain at least 150 pounds each, giving 30,000 pounds of pork which at five cents (very low) would make $1,500; deduct this from $2,650, and we have $1,150 as the actual cost of feeding 100 head of four year old steers four months, and by that time they ought to be fat. But we will say $1,200.

Now, for the *steam* process. The writer estimates the entire first cost of the apparatus at $110, but we may safely put it at $200 here. This is for 40 head. And now comes the difficulty; we can only guess at the quantity required by the steaming process. We will say one-half, or 30 bushels for each steer or 1200 bushels, $480. To this we must add the cost of grinding, &c., $120 more, or $600 for the corn. And if the feeder kept his own mill the cost would be more rather than less. And here is work for one hand and team four months, $150. Here we are left in the dark again, but I think it would be good work for two hands to prepare and cook food; here is $200 more. Another hand and team will be necessary to furnish fuel to keep steam up, $150 more. And I doubt if four hands and two teams would be sufficient to keep the machine running and the cattle full. And where so much less grain is consumed, a greater quantity of hay must be used. I think 10 pounds per steer daily would be little enough, but we will say half the quantity, 200 pounds per day, or 12 tons, $120. Now for the sum total. $500 for corn, $120 for hay, $500 for labor, and $200 for cost of the apparatus, $1,420, allowing nothing for the cost of fuel. Rather an unfavorable result, I should think, when by our common mode we can fat 100 head for $1,200. It may be urged that the estimate is not a fair one, because the feeder would have the apparatus to use for an indefinite time. So he would, but I think he would not want it more than once in this country. Besides the cost is more than double, and say nothing about the apparatus. But I do not believe it would save one-half the grain. I do not think 14 pounds of corn and 5 pounds of hay per day will make beef at all, by any process. The plan may do in some places where land is poor and a very high price, and labor much plentier than feed or stock, and cheaper, too, but surely it will not do here.

Wm. Vandermark, near Waterloo, N. Y., on his farm of 200 acres, raised crops that were estimated to be worth $7000. On 21 acres of land, pastured until June 25, he raised 121 bushels of red clover seed.

Poisonous Flour.

The black Snout-beetle, (*Sitophilus granarius*, Linn.), about one-fifth of an inch long, which is commonly found in granaries preying upon small grain, and which was introduced into this country a long time ago from Europe, is the only grain-feeding insect properly called "the Weevil." The orange-colored larva, indeed, of the Wheat-midge (*Diplosis tritici*, Kirby), which infests small grain, not in the granary, but in the field, is frequently designated by this name of "Weevil;" and in the West is otherwise known as the "Red Weevil," and in the East as the "Milk Weevil." But this is a mere popular misnomer; for this last insect belongs in reality to the Two-winged Flies (Order *Diptera*), and all the true Weevils belong to the Beetles (Order *Coleoptera*.)

We have recently been informed by Dr. W. D. Hartman, of West Chester, Penn., that "in the South this beetle has been used successfully as a substitute for the Spanish Blister-beetle (*Cantharides*), and with this advantage over the foreign insect, that it does not cause strangury, to escape from which," as Dr. Hartman further observes, "is a very great and important item in the action of a blister." We are not informed how the above discovery came to be made in the Southern States; but infer that it was probably from the great scarcity there of the imported Spanish fly, during the late war, in consequence of the rigid stringency of the blockade of their seaports. Dr. Hartman goes on to suggest, that it would be a very good idea to ascertain experimentally, whether the Colorado Potato-bug may not possess the same medicinal powers as the Grain Weevil, and the true Blister-beetles (*Lytta*) both native and exotic; and that, in that event, we might turn the hateful pest to some practical account.

There can be no doubt that great numbers of this Grain Weevil are often ground up into flour; and that, although the coarser and harder parts of them, such as the legs, snouts and wing-cases, would probably be for the most part retained by the bolting cloth, yet that a considerable portion of the body will be ground up fine enough to be incorporated with the Extra Superfine Family Flour, of which most of us partake every day. In that event, if the number of Weevils should be large, the flour would undoubtedly be poisonous; for we know now that these Weevils have nearly the same medicinal properties as Spanish flies, and Spanish flies, as is notorious, are, even in comparatively very small doses, a most violent and dangerous drug to take internally, and when swallowed in larger doses are a deadly poison.

That this is not a purely speculative view of the subject is proved by the following passage from the *Transactions of the London Entomological Society;* which, be it remembered, was written a great many years, ago, and long before it was discovered in our Southern States that the Grain Weevil raised as good a blister as the true Blister-beetles or *Cantharides* of the shops: "A medical man in Madeira assured Mr. Mills, that he considered the wings and the crustaceous parts of the Weevil so heating to the system, as to be almost as injurious as *Cantharides*, taken internally, on a slow scale."

May not a remarkable case, which occurred in 1868 in the State of New-York, of a particular lot of flour from a particular mill having poisoned all those who used it, and which was accounted for at the time on the hypothesis of a small quantity of lead having been ground up along with the flour, be in reality explicable on the theory of this flour having been manufactured from old buggy wheat, full of this particular species of Weevil? At all events, no flour made from wheat containing any considerable percentage of these Weevils, ought ever to be employed for human food. Such an article is only fit for the starch-makers.—*American Entomologist for May.*

Important International Exchanges.—The Commissioner of Agriculture, Hon. Horace Capron, has completed arrangements for exchanges of cereals, rare seeds, and medicinal and other plants, with various institutions and several Governments of different divisions of the Globe. The arrangements include the Governments of Austria, Prussia, China, Japan, Guatemala, and British Honduras; the Botanical Gardens of Melbourne, Australia, and of Kew, in England; the India Museum, in London; and the Cape of Good Hope Agricultural Society.

The hearty co-operation of scientific men representing these Governments and institutions has been secured.—*Nat. Intelligencer.*

Large and Small Farms.

We read a great deal in the agricultural papers about large and small farms, the general idea being that farmers own too much land, and by selling a part of it, and cultivating the balance in a better manner, would be more profitable.

It is useless for any writer to lay down rules for the size of farms in any section of the country. Farmers can superintend more or less land, according to their physical ability and pecuniary means. If Mr. A. owns a farm of 250 to 300 acres, that is well adapted to grain, grass, and fruit, and has abundant means to stock it and cultivate it in the best manner, and is out of debt, he can make more money on such a farm than he can on a smaller one, generally speaking. It depends in a measure, of course, how fertile the land is, what it cost to fence it, the facilty of obtaining help, &c., whether he had better sell a portion of his farm or not. A large farm produces greater cares than a small one, in the ratio of the number of hands, teams, &c., employed; and if a farmer be in poor health, or his wife be unable to attend to her household duties, with a large farm, it then becomes a question for the owner to decide, as to disposing of a part of his farm, or the whole of it, and keeping a smaller farm, where his cares would be less. —*Rural American.*

A writer in the *Hearth and Home* says:

We have an unlimited extent of land; a large portion of it of remarkable fertility, and, compared with it, a sparse population. American genius has developed and made ready to our hand every sort of agricultural machinery, whereby our power to cultivate our acres and harvest their products is increased many fold. The whole of our vast territory is threaded and interlaced with railroad and water communication, so that the products of our most remote and secluded sections have quick, cheap, and easy communication to the city and seaboard marts of trade for a profitable market. Is there anything in the nature, or circumstances of this pursuit which prevents it from availing itself of these natural and artificial advantages to be conducted on a scale as extended and profitable as other pursuits? It cannot be, and to enable us to see it more clearly in this light, let us examine some of the disadvantages and drawbacks of farming in a small way. In the Eastern and older portion of the country, and in different localities in that section, the farms that are called small usually contain from twenty-five to fifty acres, and large farms from fifty to two hundred. This classification excludes those plots of land near the cities, that are used exclusively for gardening purposes. On these small farms the system of cultivation and the crops grown, are similar, if not identical, with system and crops of the large farms, only less in extent. To this course of cropping the small farmer is driven by force of circumstances. The person who cultivates thirty or forty acres in grass, grain, roots, or to special crops, and keeps the animals to consume his products, finds he needs, for success in his business, identically the outfit in machines, implements and tools as the man who has a farm of one hundred and fifty acres. Although he has not half so much for them to do, and cannot make them earn him half so much as they would the large farmer; he cannot get on without, and must have his mowing-machine, horse-rake, tedder and horse-fork. He needs the same ploughs in kind and the number, some cultivators and harrows, and the same variety, but perhaps a little less in number, of all the numberless hand-tools of the farm. Thus our small farmer finds himself compelled to invest as fixed, but very perishable capital nearly as much as his neighbor who carries on three times his number of acres. In the matter of team, he is in precisely the same condition. He can hardly afford to keep a pair of horses for farm work, but in the busy season of the year, when his work must be done, if done at all, everybody is more than busy—it is impossible to hire. Necessity, therefore, compels him to buy and own a team though it be idle one-third of the year. The capital invested in this rapidly deteriorates, and it is a yearly expense which necessity alone will justify.

Cannibal Insects.

Do all insects feed on plants? Fortunately they do not. Many insects are cannibals. That is, they feed on other insects. Among them there is a struggle for life, as well as elsewhere. The cannibal insect feeds on the plant-feeding one and thus prevents the latter from becoming too numerous.

The different varieties of insects found within the United States are about 30,000 or about ten distinct varieties of insects to one variety of the animal kingdom. Of this 30,000

varieties of insects it is thought there are not less than ten varieties that are cannibal. These insects of prey keep the remaining three-fourths within due bounds. In the animal kingdom we find beasts of prey less numerous than the herbiverous ones; so among insects we find the class of cannibals far less numerous than those which depend npon other sources for subsistence.

Every school-boy has seen the spider at work catching flies; while thus engaged a mad wasp comes along and catches the spider; for fear that mud-wasps should become too numerous, the wasp is destroyed by the ichneumon fly, which, in its turn, falls a prey to birds and other insect feeders.

Every one must admit that cannibal insects are the farmer's friend. Now, will it pay to grow them artificially in communities where the plant-feeding insects predominate? Practical entomologists must decide on the above question. Pains ought to be taken to raise as many insect-eating birds as possible. Teach the boys not to rob birds' nests, or to wantonly destroy the lives of the old birds. In England gardeners collect the larvæ of the lady-bird (bug) to destroy plant-lice. We know, by experience, that a nest of bald hornets near a house will soon clear out all the house-flies.

It is said that the large, stinging and offensive tasted bug so common on blackberries and other fruits, if placed in a room infested with bed-bugs, will soon destroy a whole colony of the latter. This is well worth trial by some modern hotel-keepers, and by those who are always finding out a new "humbug."—*Ex.*

WHAT A MISSISSIPPI GIRL DID ON A FARM.—The following information is conveyed to us by a truthful and reliable gentleman, and should cause young men who complain of not being able to support themselves to blush all over their faces:

Miss Rebecca Cox, of Amite county, who graduated in June, 1867, returned home in January, 1868, hired a negro man 70 years old, two of his daughters, and one boy not old enough to plough. The net results of farming operations last year, paying expenses of place and hands, were: 8 banks of potatoes, 600 bushels of corn, and $960 in cash, from sale of cotton, over expenses.

Now will any young man say he can't make a living after this?—*Summit Times.*

Importance of Good Roads.

The principles of road-making should be better understood by the community at large. Farmers are deeply interested in good roads. Nearness to market, and facilities for all other kinds of communication, are worth a great deal, often materially affecting the price of land and its products. The difference between traveling ten miles through deep mud, at two miles per hour, with half a load, and traveling ten miles over a fine road at five miles per hour, with a full load, should not be forgotten.

"In the absence of such facilities," says Gillespie, "the richest productions of nature waste on the spot of their growth. The luxuriant crops of our Western prairies are sometimes left to decay on the ground, because there is no rapid and easy means of conveying them to market. The rich mines in the Northern part of the State of New York are comparatively valueless, because the roads among the mountains are so few and so bad, that the expense of the transportation of the metal would exceed its value. So, too, in Spain it has been known, after a succession of abundant harvests, that the wheat has actually been allowed to rot, because it would not repay the cost of carriage." Again, "When the Spanish Government required a supply of grain to be transferred from Old Castile to Madrid, 30,000 horses and mules were necessary for the transportation of four hundred and eighty tons of wheat. Upon a broken-stone road of the best sort, *one-hundredth* of that number could easily have done the work." He further adds, in speaking of the improvements made by Marshal Wade in the Scottish Highlands, "His military road is said to have done more for the civilization of the Highlands than the preceding efforts of all the British monarchs. But the later roads, under the more scientific direction of Telford, produced a change in the state of the people which is probably unparalleled in the history of any country for the same space of time. Large crops of wheat now cover former wastes; farmers' houses and herds of cattle are now seen where was previously a desert; estates have increased seven-fold in value and annual returns; and the country has been advanced at least one hundred years."—*Farm Implements.*

Feeding and Care of Dairy Stock.

No herd of cows will prosper or give the owner compensation, without proper consideration and care. The law of kindness should be written on every tile of the farmyard.—Gentleness towards animals will render them docile, affectionate and easy to manage. In summer, cows should be driven to and from pasture by a considerate and gentle person. At night, when their udders are filled with milk, it is both cruel and hurtful to drive them furiously "on a full run," as is often done, to the dairy yard. Cows should never be driven faster than a walk. They should always be housed on rainy and damp nights in summer, and in winter well protected, night and day, from cold storms and inclement weather. At night their stalls should be well littered, with ample space for lying down and resting with comfort and ease. Cleanliness is a virtue in the dairy yard and barn, as well as in the dairy room. In summer, good sweet pasturage, if ample, is all cows require, with an abundance of water. But the best pastures sometimes fail on account of drouth. Green fodder then is required, and every wise dairyman will have his clover field, or patch of corn, in readiness, to supply the requisite forage. In winter, good sweet hay, well cured, with an occasional dinner of turnips or carrots, or provender mixed with the coarser hay, will keep the cows in fine order and spirits, and produce the richest milk. Cows should be salted at least every two weeks. They should have fresh, pure water at least three times a day. A handful of bone dust occasionally added to the salt will promote the health of the animals. Great attention is needed at the time the cow produces her calf. She should be allowed to drink no cold water for a number of days, and should be warmly housed and kept quiet. Cold drinks will produce swelling of the udders and sometimes garget. If the udder is disposed to cake or swell, the cow should be milked clean three times a day, the udder bathed in lukewarm water, and one drachm of hydriodate of potash, given internally with warm meal and water three times a day until all the tumefaction subsides.—*From Prize Essay.*

The Farmers' Club of Franklin Co., Ohio, recently recommended, as a preventive of hog cholera, that the hogs be fed salt, ashes and sulphur.

Growling.

The vicissitudes to which the agriculturist is subjected are so numerous, that they are apt to complain and look upon the "dark side," in spite of the aggregate successes which they have achieved. We knew an accomplished but eccentric gentleman, who, being a lawyer, and, as he added flippantly, an infidel besides, was very fond of amusing himself over the real and imaginary sorrows of his fellow-citizens engaged in agriculture.—One day, on the court-house steps of...., an old planter, who was noted for his zealous piety, was complaining of the season, of the prospects of his crop, and prophesying that the people would come to ruin; and noticing our "infidel friend" staring at him, he inquired, "Colonel H....n, how's your crop?"

The colonel straightened himself up, and remarked, "Sir, I am too religious in my nature to plant anything. I wouldn't plant even a single potato."

The pious planter was taken aback. He knew the colonel was a professed scoffer and an infidel, and after recovering from his astonishment, he said: "What do you mean by being too religious to plant even a potato?"

"Why, this," said the Colonel, affecting to be very serious, "at present I plant nothing, and as a result, I never have any occasion to complain of the variableness of the seasons, or rail as you do, sir, against the wise administration of the workings of Providence. But if I plant a single potato, it would change my moral existence and imperil my personal happiness. If it were raining I should be miserable, because the rain might injure my potato; if it were sunny or bright, I should be unhappy, lest a drought might follow and destroy my potato. If it were cold and bracing, I should be feverish with indignation lest my potato would be frost-bitten. If it were intensely hot, I should smother with an extra fever lest my potato would burn up. No, sir," continued the Colonel, "I am too religious by nature to imperil my soul, if I have got any, by being a miserable agriculturist."—*Leslie's Ill. News.*

The Canada Farmer thinks there is nothing equal to timothy grass for a permanent meadow, but it thinks the English plan of sowing a variety of grasses for meadows might be adopted with advantage.

Something About Hogs.

A correspondent of the *Cincinnati Commercial* has written an amusing article on hogs, a portion of which we give as follows:

I beg your readers not to be alarmed. I am not going to write a polished letter, although the heading may indicate that much.

The hog is considered, for example, a filthy beast; when, as the fact is, he is the neatest creature, naturally, in animated nature. Poor hoggy is troubled with fleas. He understands fleas, and has a way of getting rid of them that gave rise to the slander respecting his proclivities for dirt. Hoggy rolls in the mud. The flea finds himself plastered up. Soon as the mud is dry hoggy rubs off mud and flea together.

Give your hog a clean pen, with plenty of fresh water to wash in, and he will put to shame the neatest housekeeper.

Again, he is charged with being a voracious feeder, and not nice as to his food. But, we must remember, that like Cardinal Woolsey, he is a beast "of unbounded stomach," and not always a square meal to fill it with. Consult hoggy's nature, and feed him well, and you will find him as nice as the most finished epicure that frequents the St. Nicholas. Every one, a naturalist I mean who has eyes looking out of his heart as well as brain, who has watched a pig in an orchard, realizes this. At first the animal gorges himself with fruit; after a time he gets choicy, listens for the newly dropped fruit, and has his favorite tree.

The strangest fact connected with my subject is his taste for snakes. Hoggy regards snakes as a delicacy, and makes no distinction between the harmless and the poisonous sort. When I first came to Mac-a-check the valley abounded in copperhead and rattlesnakes. The hogs have cleared them out. It is amusing to watch Mr. Hog at this sort of a meal. When he first sees the snake he makes after it on a lively trot. His expressive countenance says plainly, "Here is the first delicacy of the season." He takes the indignant snake about the middle, and with his fore-hoof placed artistically on the back of the snake, he commences eating in the most deliberate and business-like manner. The snake remonstrates; he strikes wickedly at the gourmand. Hoggy winks, and grunts, and continues his meal until Mrs. Eve's first lover and last domestic trouble has disappeared.

I insist upon it, although frequently laughed at for my opinion, that the hog has a very expressive countenance: at least it is equal to all the emotions and mental processes to which piggy is subjected. If one will study it he will find an intense seriousness, and an eye to witness it, as it were. He looks up from under his ears with an expression that says: "Come, now, no nonsense." I doubt whether a hog is capable of a joke. It is the hog trait shared with some of our good neighbors, to be capable of fun. A drunken hog, however, is very entertaining. I once saw a penful in this condition. The distiller had, through mistake, turned out a quantity of whiskey. The hogs drank as all hogs do, to excess, and acted very like their dignified and pretentious superiors. They were frisky and senseless. They would lean against each other and squeal. Then they would run, and, striking a root or stone, would turn somersaults, in the most comical manner. I observed one fellow leaning, in silence, against the fence. He had an intensely solemn expression. "Look at that old cuss," cried the distiller, "a lettin' on he ain't drunk."

This same distiller was troubled by a poor wretch who, hanging about the distillery would steal enough whiskey to get drunk on. One day the distiller found him in this condition, and exasperated beyond endurance, rolled the poor creature out, and pouring a bucket of slop over him, called up the hogs. The hungry swine went to work, eating the slop off the clothes. The poor fellow, unable to help himself, but aware that the "hogs were in the garden," would feebly wave his hand, and mutter, "shoo, shoo, thick 'em, Towser, thick 'em." The hogs, unmindful of the remonstrance, would insert their snouts under the helpless inebriate, and turn him with a "flop" really comical. They ate off his clothes, and were proceeding to take bites out of his body, when the distiller interfered, and rescued the victim.

Ever after those hogs would take after the drunken fellow the moment he appeared in sight. The strangest part of it, however, is the fact that other swine took it up and also chased the drunken man. It seemed as if the distiller's hogs had narrated the circumstance to the other hogs, and they had talked the thing over.

Hammonton, N. J., has sent a million quarts of strawberries to market this season.

The American Farmer.

Baltimore, August 1, 1869.

TERMS OF THE AMERICAN FARMER.

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BALTIMORE.

MARYLAND STATE TEACHERS' ASSOCIATION.—This Association, devoted to the interests of education in Maryland, held its annual session in Baltimore on the 14, 15, 16th July. The time of the Association was taken up with set addresses, and the discussion of many interesting topics relating to education. Among those who delivered addresses was the distinguished Mathematician, Prof. Davies.

President Welling, of St. John's College, was elected President of the Association for the coming year, and Prof. Hollingshead, of Baltimore, and N. B. Worthington, of the Agricultural College, Vice Presidents.

THE VIRGINIA GAZETTE.—Our esteemed contemporary at Lexington, noticing the July number of the *Farmer*, says: "If the publishers knew our appreciation of the *American Farmer* they would send it to us more regularly. We have not a copy of it in a long time before." We can only say to our friend that we mail to the *Gazette* punctually every issue of the Farmer, and regret that it is not as punctually received. In making its pages worth reading, there are other evidences than this that they are made also worth stealing.

NEW YORK STATE AGRICULTURAL SOCIETY.—We acknowledge receipt of Premium List and Regulations for the Twenty-ninth Annual Fair of this Society, to be held at the city of Elmira, beginning Sept. 14th, and continuing four days.

"BRYAN'S AGRICULTURAL MARL AND MUCK LIFTER."—In another column will be found an advertisement and cut of this machine. At the request of the patentee, Mr. T. Alfred Bryan, we recently saw the "Lifter" in full operation on the farm of Mr. James Carville, Kent Island, Md., and it is our pleasure to report very favorably on its merits. It was worked with perfect success under very trying circumstances—the material lifted being a fibrous salt marsh, very adhesive and liable to choke the bucket. Notwithstanding, the mud was raised and deposited in the cart at the rate of about 100 buckets, or 1500 bushels, per day. Under ordinary circumstances it will, no doubt, raise and deposit 150 buckets per day.

The value of marl and muck as permanent fertilizers is, we believe, generally conceded, and we can confidently recommend the machine to farmers in the tide-water region.

MONTGOMERY COUNTY AGRICULTURAL SOCIETY.—This Society will hold its annual Fair, beginning on Wednesday, 1st day of September. The officers for the current year are, President, Jos. H. Bradley; Vice-Presidents, Edward W. Owen, Dr. Washington Waters, Nathan S. White, Robert W. Carter and Oliver H. P. Clark; Executive Committee, Nicholas D. Offutt, John T. Desellum, W. Viers Bouic, Wm. T. Dove and Thos. J. Peddicord; Corresponding Secretary, Dr. E. E. Stonestreet; Recording Secretary, W. Viers Bouic, Jr.; Treasurer, Wm. Brewer.

THE NORTH CAROLINA AGRICULTURAL SOCIETY.—It is announced in the *Henderson Index*, that this Society will hold a Fair in the city of Raleigh, to begin on the 19th of October and continue four days. K. P. Battle esq., President.

The Cape Fear Agricultural Association of the same State representing the fifteen counties of Eastern Carolina, will hold its first annual Fair, near the city of Wilmington about the middle of November. S. L. Fremont, President.

ST. LOUIS AGRICULTURAL AND MECHANICAL ASSOCIATION.—Our friend, William M. McPherson, Jr., Esq., has favoured us with a copy of the Premium List put forth by this Association for their coming Exhibition, to be held at St. Louis, beginning on the 4th October, and continuing four days.

Agriculture in Public Schools.

At the annual meeting of the Teacher's Association of the State of Maryland, held in Baltimore on the 14th, 15th and 16th of July, Prof. Worthington of the Agricultural College, delivered, by invitation, an address, on The Relation of Agriculture to Education, from which we quote, in part, what is said on the subject of agriculture in Public Schools.

Having illustrated by many facts, and especially by the averages of the great staples of the State and the country at large, the low condition of agriculture—a condition attributable mainly to want of instruction in the great body of cultivators of the earth, and proper training in their business, and having urged the paramount importance of a prosperous agriculture both to that large portion of the people engaged in it, and to every industry and every interest of all the people of the State, the speaker continued:

"Now, Mr. President, it will be seen, why I seek to enlist educators, and the friends of education, in Maryland, in the interest of her agriculture.

"But here I shall be met with the argument that all this educational system of the State, outside of Baltimore, is in behalf of the agricultural population, and designed for their use; and this must indeed be acknowledged. But here, still, I would reason with you. You have taken in charge the education of seventy thousand children, the sons and daughters of the very people who live immediately on the fruits of agriculture, and when I look through your courses of instruction, I see nothing whatever to indicate that you teach them one word of that which, next to their religion, it most directly concerns them to know. These children are put here to live and to work in a material kingdom, which is a kingdom of laws; these laws, to prosper, they must obey, and to obey they must learn. Is it even whispered to them in this which you call their education, that there are such laws, and that they have an interest in learning them? You say your schools are elementary—you teach the beginnings of knowledge—do you teach them any of the elements, the beginnings, of those sciences and that knowledge which underlie all the industry of their future lives? Do you intimate to them that this great industry is something more than handi-craft? Are their minds in any way directed to it as a matter of knowledge and manifold science, which beginning to look a little into now, while they are learning the lispings of their mother-tongue, they are to follow up in the future, as opportunity may offer, as great studies, worthy of their highest and noblest efforts? Do you teach them of their little fellow-creatures, the insects, and put them in the way of observing their habits and distinguishing their kinds—how some are enemies and some friends; some destroying the fruits of the earth and some protecting them? Are they shamed out of the cruelty of killing the birds, by teaching them the several duties in our farm economy, that God has set these, their little fellow-workers, to do? Do you teach them to consider the lilies how they grow?—that each one is an organism and a life subject to law?—that he may escape, at least, the sarcasm of the poet,

> "The primrose on the river's brim,
> A yellow primrose is to him,
> And it is nothing more."

I speak not, sir, of chemistry and mineralogy and geology, and meteorology, and mechanics, and engineering—I ask only whether in your elementary education, you are teaching the A, B, C, of agricultural knowledge?

Let me fortify what I would say to you on this point by the authority of a name recognized and honored in the annals of Education, the great Swiss Educator, Fellenberg—of whom it has been said that his "educational establishment at Hofwyl, in the Canton of Berne, has attracted more attention, and exerted a wider influence, that any one institution in Europe or America, during the present century." You know, sir, that this great and good man, born to every advantage of education, which wealth and rank could secure, advanced early to positions of trust and influence in public life, enjoying extensive opportunities of observation by travel in the most refined nations—at the age of thirty-one, consecrated himself and his fortune to the improvement of Education. For forty years that famous establishment at Hofwyl was sustained by his personal efforts and the greatest pecuniary sacrifices. He established, about the year 1808, a school of "Theoretical and Practical Agriculture" for all classes. In the same year, he commenced the formation of a Normal School, or seminary for teachers, at his own expense. Of this, (in Barnard's "National Education in Europe") it is said—"The Rural or Agricultural School at Hofwyl

was designed to be a seminary for teachers, as well as a school for those devoted to labor. Both Fellenberg and Vehrli, his pupil and associate, deem it very important for all who are to be employed in the instruction of common schools to have a thorough acquaintance with the practical labor of the farm,"—and further, it is said, "So much is this object appreciated in some of the seminaries for instructors in Germany, whose plan and location do not admit of a farming establishment, that a garden and a nursery of fruit trees are annexed to the seminary, and regular instruction is given in connection with them." Again —"Fellenberg has found that those who were trained in the agricultural institution were among the most valuable and faithful educators he could obtain: and on this account he deems an establishment of this kind an important aid to one of a more scientific or literary character."

"A course of lectures on agriculture was given to the assembled teachers by Fellenberg himself. The first subject illustrated was the power which a knowledge of the great principles of agriculture, confers over the operations of nature, by giving a suitable direction to the cares and labors of its possessor; and the wretched slavery of the ignorant to the mere changes of weather, and to those effects of the elements, which the Creator gives us the capacity in some measure to employ for our own benefit. He next considered the best mode of rendering agriculture a means of exciting mental activity, in the children and parents of a village, and of forming their character. In short, the great object of the course was, not to teach the science, but "to give such general views as should lead the teachers to appreciate and inculcate its importance, to observe and reflect on the prevailing evils and their remedies, and to excite their pupils to observation, as a means of rendering their very labor a source of intellectual and moral improvement."

"You see, sir, that the enlarged and generous views of this great man have in them nothing to be feared by those who are jealous, lest industrial applications of knowledge should interfere with that system of educational training for which it is claimed that it is sanctioned by the experience of centuries. "The great object of education," he says, "is to develop all the faculties of our nature, physical, intellectual and moral, and to endeavor to train and unite them, in one harmonious system, which shall form the most perfect character of which the individual is susceptible; and thus prepare him for every period, and every sphere of action to which he may be called"

"I will not detain you to show, how, since the time of Fellenberg a conviction has taken possession of the leaders of public opinion, both in Europe and our own country, of the necessity of agricultural education. In Europe we find in existence, elaborate systems of public instruction devoted to it; while the Congress of the United States has made for its use the magnificent appropriation of ten millions of acres of land.

"Our own schools cannot be said, to have got as yet into successful operation, as Agricultural establishments, mainly, perhaps, for want of experience in the working of such institutions. In Europe, there are not less than two hundred, from the lowest to the highest grade, successfully working, in which the leading idea is instruction in the various departments of earth culture and in the sciences applicable thereto."

Steam Ploughing.

The use of the Steam Plough is becoming a matter of great interest in our agriculture. It will be a surprise to many, to learn how large a number of these ploughs are in operation in England. We have seen the assertion made lately that there are as many as two thousand in that country. The *Mark Lane Express*, speaking of the trial of steam cultivators, at Leicester show of the Royal Agricultural Society of England, says: "No one could examine the work done, without being convinced that the soil was turned up, and left to lie under the best possible circumstances calculated to allow the atmospheric influence, the best of all cultivators, to act upon the whole mass, and to leave it after an autumn and winter in that condition to which very little working by other implements would be needed."

In the Monthly Report of the Department of Agriculture for May and June, we find the following account of a trial made lately in New Jersey.

"An interesting trial of one of the Fowler double-acting steam-ploughs has just occurred in Burlington county, New Jersey, upon a

tract of 32,000 acres owned by Colonel William C. Patterson, of Philadelphia. Several hundred acres were planted in beets in 1868, with a result so successful that the proprietor determined to initiate and undertake the manufacture of beet sugar upon a large scale, and is making arrangements of a magnitude commensurate with the extent and importance of the undertaking.

The commissioner of Agriculture was present during several days' ploughing and returned more than ever convinced of the practicability and necessity of introducing steam generally in the culture of all lands in the country adapted to this improved mode of culture.

The gang of ploughs consisted of 12, six operating at a time, driven by two 14-horse power engines, one at each end of a series 60 rods furrows; the breadth cultivated at one movement was 78 inches, the depth 8 inches. and the furrows were laid with faultless regularity, at a rate of speed which would insure the perfect ploughing of at least 18 acres per day, and under very favorable circumstances 25 acres. The machine was guided easily by a man, and reversed at the end of the furrow without a moment's loss of time. The surface was rough, though the soil was a sandy loam, easy of cultivation.

Two other steam-ploughs of the same manufacture are already in use in this country, one in Louisiana and one in the west. The successful use of these machines must stimulate the introduction of others, or, better still, the more perfect adaptation by American inventors of steam cultivating machinery to the wants of American agriculture. It should be remembered that the principle upon which this machine is built was first applied in an American invention of more than 30 years ago.

It should be mentioned that Colonel Patterson has also in view the feeding and improvement of stock, and to this end he has already obtained a large number of English mares of the most approved blood, for breeding purposes."

CARROLL COUNTY AGRICULTURAL SOCIETY.—We have received with pleasure, the Premium List and Regulations for the First Annual Fair of the Carroll county, Agricultural Society, to be held at Westminster, beginning on Tuesday 28th September and continuing four days.

Notices of New Publications.

The Southern Review.—The contents of the July issue of the Review are—I. Alexander Hamilton. II. American Dictionaries. III, Anthropology. IV. Chivalrous Southrons. V. Theories of Reasoning. VI. Pocahontas. VII. The New Science. VIII. The Solar System. IX. Notices of New Books.

We read each succeeding number of this publication with increased satisfaction—devour it, indeed, as a thing we had longed for, and close our reading with a sense of personal obligation to the editor. Perhaps it is that our capacity to appreciate is improving, but more likely our great Review "*vires acquirit eundo.*" Every one who would think well and wisely on morals and politics especially, should do more than read, should study the leading articles of the *Southern Review*, and to this end should own the numbers and put them away for re-reading. Four quarterly numbers, $5 per annum. A. T. Bledsoe, publisher and proprietor.

The New Eclectic Magazine.—This admirable monthly gathering of the best articles from the best magazines, by Messrs. Turnbull & Murdoch, Baltimore, is promptly issued, and we are glad to believe is making its way very prosperously. For many persons busily occupied, especially in the country, such a magazine as this, and there is surely nothing better of its kind, supplies all that is required of current literature, and in the most convenient and attractive form. Price $4 per annum.

Journal of the Franklin Institute—devoted to Science and the Mechanic Arts.—No. 1, vol. LXXXIII of this valuable journal of science, is received with accustomed punctuality.

De Bow's Monthly (New Orleans) Review.—We receive and read with pleasure this excellent Review, devoted as it has always been to the interests of Southern industry. W. M. Burwell, editor and proprietor, 14 Merchants' Exchange, N. Orleans.

Illustrated Catalogue of School Material.—To all school people, old or young, this is a very attractive catalogue, descriptive and illustrative of *Modern School Furniture*, and an unrivalled stock of "Everything for Schools." J. W. Schermerhorn & Co., 14 Bond street, New York.

Earth-Closets—How to Make Them and How to Use Them—by Geo. E. Waring, Jr., author of "The Elements of Agriculture," &c.—We are indebted to our neighbours, Henry Taylor & Co., for a copy of this publication. The matter of using dry earth as a disinfecting agent, and its application especially in "protecting dwellings against the gravest annoyance, the most fertile source of disease, and the most certain vehicle of contagion," is well treated by the author.

In its agricultural aspect, the use of dried earth in the treatment of the material of sinks and water-closets, so as to make it readily, and without offence, available for the purpose of manure, is a matter of the greatest importance. There is annually an enormous loss to agriculture of the very best of all fertilizing matter in the difficulty of dealing with and handling it. This difficulty is quite overcome, and in the simplest manner, by the proper use of dried earth as here described. The method is especially applicable in the country and in small towns, and leaves no excuse for submitting further to a foul offence, nor for wasting what is of so much value. Price 25 cents.

De Witt's Sixpenny Series of the Best Music for Voice and Piano.—We have received four numbers of this series, and taking them as specimens, can heartily commend them to favour. "Blue Eyed Violets" is a gem, and "Up in a Balloon" a very pretty popular ballad. It is without question very cheap and very popular music, and is designed to be a *Complete Musical Library*, which will keep its patrons supplied with every musical novelty. Each number will contain a complete piece of music, and will be mailed free to any address for 6 cents. Robert M. De Witt, publisher, 13 Frankfort street, N. York.

A Guide to the Study of Insects, and a Treatise on those Injurious and Beneficial to Crops. For the use of Colleges, Farm Schools and Agriculturists. By A. T. Packard, Jr., M. D. We are in receipt of No. VIII of this valuable addition to our works on Entomology, from the Press of the Essex Institute, Salem, Mass.

There were shipped from Vergennes, Vt., between March 1st, 1868, and March 1st, 1869, 278,689 pounds of butter, or 54,000 pounds less than the previous year.

Officers of the Maryland State Agricultural and Mechanical Association.

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Richard Contee.

Mr. L. Winne, a successful farmer living near Albany, N. York, has yearly fed a large number of sheep, and his mutton has a good reputation. He says he buys sheep of all breeds, but gets the best returns from half or three-quarter Leicesters. He strongly insists on the utmost comfort and quiet for the sheep; will not allow visitors in his sheds, and has the sheep fed by one person.

Green Manure.

BY CUTHBERT W. JOHNSON, F. R. S.

Green manure was almost the first used of fertilizers. As soon as man began to till the earth he turned into the soil the plants with which it was tenanted. It was only when by successive crops he had impoverished the land, that it became necessary to find some additional means for restoring its fertility. Some of Dame Nature's hints would soon lead to the employment of green crops as a manure. The gradual formation of beds of peat, in the hollows of even the most barren soils, would naturally suggest to the early cultivator that certain plants had the power of deriving almost all their support from the atmosphere and from water; it would then become a question as to which of these were the best able to thus rapidly supply themselves with that requisite nourishment.

Now, the earliest of agricultural writers, whose works have escaped to us, allude to the cultivation, as a green manure, by the Italian farmers, of the lupine. This plant grows well even on exhausted soils, and, when in flower, is still ploughed into the soil by the farmers of Italy as a green fertilizer. For the same purpose the farmers of some districts of England cultivate the buckwheat, a plant which will grow on impoverished soils; in other districts they plough in a crop of coleseed, which, like the lupine and the buckwheat, derives more than an ordinary supply of its nourishment from the atmosphere. On almost all the sea coasts of our islands the green sea-weeds are eagerly collected by the farmers, and employed as a manure; and in some districts the leaves of our root crops are as carefully and as beneficially ploughed into the soil; we also learn from Liebig that in Germany the best results have been obtained from manuring the vineyards with the cuttings of the vine. "The branches are cut from the vine in July or August, whilst still fresh and moist. If they are then cut into small pieces and mixed with the earth, they undergo putrefaction so completely, that, as I have learned by experience, at the end of four weeks, not the smallest trace of them can be found. Some cut them in small pieces and hoe them into the soil." (*Organic Chem.* 213.)

Still, we are all aware that green manures have never been generally or systematically used; for, as I have on another occasion remarked, the agriculturist has ever been more desirous of employing as food for his stock the vegetable produce of his land, than to bury it in the earth to promote the future productiveness of the soil. Yet whenever green succulent substances, such as weeds, river collections, sea-weed, &c., have been used, the result has almost always been satisfactory.—The putrefaction of the vegetables, and the gases in that case emitted, appear to be on all occasions highly invigorating and nourishing to the succeeding crop. During this operation the presence of water is essentially necessary, and it is most probably decomposed. The gases produced vary in different plants—those which contain gluten emit ammonia; onions, and a few others, evolve phosphuretted hydrogen; carbonic acid gas and hydrogen gas, with various vegetable matters, are almost always abundantly formed. All these gases, when mixed with the soil, must be very nourishing to the plants growing upon it. The observations of the farmer assure us that they are so. He tells us that all green manures cannot be employed in too fresh a state, that the best corn is grown where the richest turf has preceded it; and that where there is a good produce of red clover, there will assuredly follow an excellent crop of wheat; he finds, also, when he ploughs in his crop of buckwheat to enrich his land, that this is most advantageously done when the plant is coming into flower. The chemical explanation of these practical observations is not difficult. "All *green succulent* plants," said Davy, "contain saccharine or mucilaginous matter, with woody fibre, and readily ferment; they cannot, therefore, if intended for manure, be used too soon after their death. When *green crops* are to be employed for enriching a soil, they should be ploughed in, if it be possible, when in flower, or at the time the flower is beginning to appear; for it is at that period that they contain the largest quantity of easily soluble substances, and that their leaves are most active in forming nutritive matter.—Green crops, pond weeds, the parings of hedges or ditches—all kinds of fresh vegetable matter, require no preparation to fit them for manure. The decomposition slowly proceeds beneath the soil, the soluble matters are gradually dissolved, and the slight fermentation that goes on, checked by the want of a free communication of air, tends to render the woody fibre soluble, without occasioning the rapid dissipation of elastic matter. When

old pastures are broken up and made arable, not only has the soil been enriched by the death and slow decay of the plants which have left soluble matters in the soil, but the roots and leaves of the grasses living at the time, and occupying so large a part of the surface, afford saccharine, mucilaginous, and extractive matters, which become immediately the food of the crop, and the gradual decomposition afford a supply for successive years." (*Agricultural Chemistry, p.* 280.)

But the question still remains to be more clearly answered, how do certain plants, instead of impoverishing the soil on which they grow, add, if ploughed into it, carbonaceous matters? Now, to this point Prof. Voelcker has not long since directed his attention. He tells us (*Jour. Royal Ag. Soc.*, vol. xxv., p. 532,) that "we have abundant proof that it is chiefly the carbonic acid of the atmosphere that supplies the carbon of plants, or, in other words, the great bulk of all vegetation. It is calculated, indeed, that at least three-fourths of the dry substance of plants is derived from the carbonic acid of the atmosphere. During the daytime the absorption takes place continuously; and no sooner have the leaves absorbed carbonic acid than they set about the work of destroying its form, assimilating the carbon, manufacturing it into starch, gum, sugar, and other combinations found in all vegetable productions, and at the same time throwing off the oxygen, so as to restore the balance."

"And," continues the Professor, in another portion of his valuable essay, "the observations I have hitherto made all tend to show the *direct* influence which the atmosphere has in the nutrition of plants; but there is another part which it plays in the growth of vegetables, which, though it may be called the *indirect* one, is so great in its effect, that we may say positively that all soils which are not penetrated by air are unproductive, no matter how much food they may otherwise contain. Cases are constantly brought under my notice, of soils, sent for examination, which are characterized as unproductive, but turn out to contain an abundance of all the mineral constituents required for the growth of plants, and require only to be thoroughly penetrated by the air in order to furnish an unlimited quantity of food. The atmosphere really exercises a most beneficial effect both on the inorganic and organic constituents of the soil. I have alluded to the large quantity of carbonic acid present in the air which exists in the interstices of the soil, but this supply cannot be produced unless the air find its way into the soil. An excess of organic matter, in the shape of decaying roots or leaves, is so injurious, that where it exists in soils which are not easily penetrated by air it would be much better for it to be burnt altogether away. At first sight this may appear to involve a great waste of useful material in clay soils; but if the beneficial effect be greater than the sacrifice, it can scarcely be called a waste; for although serious doubt has been entertained respecting the utility of burning, some soils are with so much difficulty penetrated by air, that burning is the only way of destroying the organic matter, which when present in an imperfectly aerated condition, is rank poison to most cultivated plants. It is certain that the destruction of sour humus, as it has been called—though in the chemical point of view all humus is acid—has been attended with most beneficial effects, and when recourse cannot be had to proper means of aeration, this destruction has been practiced with great advantage to the succeeding crop, even if, as in the case of turnips, it would be otherwise benefited by the presence of carbonaceous matters in the soil. When, however, we can effect the destruction of organic matters by the atmospheric oxygen, the practical result, I have no doubt, will be greater; for not only does the air, and more especially the atmospheric oxygen, act upon the organic matters in producing carbonic acid, but it also has an important effect upon them in producing nitrates in the soil.

"We see, then, that it is not only from the atmosphere by their leaves, but from the soil by their roots, that plants derive their supplies of carbonic acid gas. Some time since, M. Boussingault made some very careful experiments upon the amount of carbonic acid which occurred in soils, and he found that whilst the atmosphere that rested upon the soil only gave four to five in every 10,000 parts, the air in the soil contained, in sandy soil recently manured, 217 parts of carbonic acid in every 10,000 parts. Shortly after rain, the air from the same soil was again analyzed, and was found to contain as much as 974 parts of carbonic acid, evidently showing that the wetting of organic matter, and the rapid decomposition which, through contact with the

porous earth, had taken place in organic matter, had led to the destruction of the humus, and the formation of large quantities of carbonic acid. This threw some light upon the very startling growths sometimes noticed, especially with regard to root crops. They knew how very rapidly young turnips started after a good shower of rain, if the land had been well dunged, arising from the rapid production of carbonic acid in the soil. They looked in vain for this result in soils which had not been properly cultivated. The quantity of organic nitrogen in the soil is very large.

"'Some years ago,'" adds the Professor, 'I made an experiment with the view of ascertaining how much nitrogen was present after the clover crop had been removed, and I ascertained that, taking an acre as the experimental area, it was equivalent to rather more than the amount of nitrogen present in 8 cwt. of Peruvian guano. It has been found that the clover crop is the most excellent preparation for the succeeding wheat, and it is known now as a fact, that after growing a good crop of clover a very large amount of roots is left in the soil.'"

The primary question in ploughing in a green crop is, of course, the profit compared with consuming it by live stock. This inquiry has been carefully considered in three papers, which are contained in the recently published number of the Journal of the Royal Agricultural Society, (vol. iv., pp. 99, 103, 107, N. S.) by Messrs. Peter Love, G. Murray and W. E. Wright. Another use of one green crop—the white mustard—when ploughed into the soil, has been described by Mr. Love, viz., its action as a smothering crop, for the cleansing of foul clay soils.—*Mark Lane Ex.*

HOME-MADE SUPER-PHOSPHATE.—Get all the bones you can find. Put into a wide wooden trough, 500 to 1000 pounds at a time; take pure sulphuric acid (60 deg. quality) at the rate of two carboys to a ton of bones. Mix half and half with warm water, and apply directly over the bones. Sprinkle over the top with dirt; allow them to remain a day or two, and on uncovering, the bones will fall to pieces at the slightest touch. Spread out on the floor to dry, and you have a superphosphate better than can be bought.—*Horticulturist.*

How to Oil a Harness.

First, subject the harness to one or two coats (as the leather may need) of lampblack and castor oil, warmed sufficiently to make it penetrate the stock readily. Then make about two quarts of warm soap-suds, and with a sponge wash the harness. When dry, rub it over with a mixture of oil and tallow (equal parts) with sufficient lampblack to give it color—or what is better, Prussian blue—which gives it a new and fresh look. This compound should be applied sparingly, and be well rubbed in, which can be quickly done, and will leave a smooth and clean surface. The advantages of this process are—

1. By saturating the stock in the first place with oil, the soap and water are prevented from penetrating it in the process of washing. When leather is permitted to absorb water or soap, it has an ultimate tendency to harden it.

2. When the harness is washed first, (as is generally the case,) the water repels the oil; consequently in the one case you have the oil inside of the stock, and in the other you have the soap and water.

3. By oiling first it softens the dirt, so that it can be washed off in at least one-half of the time required when washing before oiling, and also saves the "scraping" process, which defaces the grain of the leather.

4. It will remain soft much longer from the fact of its being penetrated with oil.

5. The whole process can be accomplish without the delay of waiting for it to dry.

Consequently the harness can be oiled and cleaned in much less time—will remain soft longer, wear longer, and look better.—*Ex.*

EDUCATION OF THE AGRICULTURIST.—No man is so high as to be independent of the success of this great interest; no man is so low as not to be affected by its prosperity or decline. The cultivation of the earth is the most important labor of man. Man may be civilized, in some degree, without great progress in manufactures, and with little commerce with his distant neighbors, but without cultivation of the earth, he is, in all countries, a savage. Until he gives up the chase and fixes himself to some place and seeks a living from the earth, he is a roaming barbarian. When tillage begins, other arts follow. The farmers, therefore, are the founders of human civilization.—*Daniel Webster.*

The Insect and Its Enemies.

BY DR. FRIEDRICH VON TSCHUDI.

Translated for "Our Dumb Animals" by M. B. A.

When winter covers the fields and meadows with its white mantle, it is said the activity of Mother Nature has gone to sleep. At least a countless number of her children sleep in silent, hidden rest. The busy life which cradled itself in the flowers, crawled on the ground, bustled about in the bushes and trees, hopped in ditches and sunned itself on the walls has disappeared. Big and little birds have gone away to a happier south beyond the Alps and the sea. There is not much left that is beautiful or friendly. The great flocks of crows alone rove hungrily through the land, a few finches and sparrows linger about the stables and sheds, and a troop of tomtits scramble hurriedly around in the bushes and trees. Three or four months pass thus. But in February already, when the young grain, longing for the sun, bores its tops through the mantle of snow, and the buds and blossoms begin to swell, hoping for spring, here and there come a pair of larks that fly joyfully up from the clods of earth towards the sun and the spring clouds. Each week brings new visitors, tunes new voices, and before a couple of months have passed, every bush has its song, and every tree its singer.

Inattentive children of Nature that we are, now for the first time do we joyfully and happily appreciate the song-crazy little feathered-folk which now forces itself so pleasantly upon our attention. Lark calls thrill high in the air, blackbird notes in the tops of the fir trees, hedge sparrow songs in the elder bushes and quail notes in the cornfield. Now the bird world first appears to be there, and indeed only for our pleasure, a pretty joyful plaything of creation. This is proof already of the existence of a relationship between bird-life and man-life. It is an earnest call upon us to honor the beautiful in nature, beauty in melodious song, in shining nuptial plumage, in light-winged flight, in pleasant family life. But we do not ignore that a large fraction of species of birds, which has no beauty in or about itself, or shuns the eye of man, is not under consideration. And yet these have their object and aim. But we must go deeper into the life and ways of animals, to the position which is assigned them in the great house-keeping of Nature. We shall then be able to determine their signification for men also. A superficial glance at the composition and manner of life of the bird world shows us that most of our rules of life have their foundation, not on the regulations of the vegetable kingdom, but either exclusively or chiefly on those of the animal kingdom. In Germany and Switzerland live, part of them continually, part for a longer or shorter time, more than two hundred and fifty kinds of birds. The most numerous are *insect-eaters*, which comprise nearly eighty kinds, in sparrows, larks, swallows, thrushes and others. All this numerous folk nourish themselves, as their name indicates, part of them exclusively part chiefly, upon insects. The following most numerous order, that of web-footed birds, of about forty kinds, of which it is true many visit us but seldom and only for a short time, live, in the majority of their branches, ducks, sea-gulls, and others upon animal food. Swans do not disdain this; geese alone adhere exclusively to vegetable food. The morass or swamp birds, of about thirty varieties, almost all subsist upon animal; birds of prey, of about the same number, live exclusively on animals; of fowl which, in six families, number nearly twenty kinds, land rail, corn crake and water hens, live almost entirely upon animal substance; partridges and wood hens at certain times; crows of all kinds, eleven in number, divide their appetites between animals and vegetables, and are greedy eaters of all. The so-called seed-eaters, consisting of the family of finches, sparrows and linnets, of nearly thirty kinds, do not rightly deserve their name; as, for example, all finches and sparrows in summer consume as much animal food as vegetable, if not more. The only kind of bird of which subsists exclusively on vegetable food is the dove. Of this bird there are about five kinds. Thus, on the whole, only one part, and this part comprising only a weak family, and a few families of the remainder, together scarcely a twelfth or thirteenth part of our various kinds of birds, eat exclusively vegetable food.

This short survey is significant for our object. What does it teach us? Firstly, it shows us certainly a firm ordinance of nature which manages economically with the products of the vegetable kingdom; then when we examine the manner of animal food of which the majority of birds avail themselves, we recognize a second side of that order in nature which concerns the protection of the

vegetable kingdom. All so-called insect-eaters nourish themselves more or less upon such insects as, by their great increase, threaten and often destroy the vegetable covering of the earth.

Nature does not choose to reach her ends by the simplest and apparently the shortest ways; her purposes are manifold, and the inconstibility of her means corresponds to them; she exhibits her life in a million forms and grades, and extends her kingdoms in a manner which appears inconsistent and contradictory. Besides multiplicity and superabundant plenty, *limitation* is also typified in the insect world. It has, like the bird and animal world, its plant eater and its bird of prey, and in the wisest distribution. Wherever the vegetable world is most productive and luxuriant, there for example will be found more kinds of beetles than of flowering plants, and among the former, plant eaters predominate. In the mountains the flowering plants outnumber the beetles, and high on the Alps the latter fail long before the former, and of insects and spiders which lodge above the snow limit, animal eaters outnumber vegetable eaters considerably, evidently for the protection of that scanty and tender vegetation.

The vegetable kingdom is the foundation and dependence of all higher life. Without plants no animals—for even insect-eaters depend indirectly on the vegetable kingdom, as they devour plant-eaters—without plants the existence of man is inconceivable—of man as he is, the aim and crown of creation. If Nature pleases herself in the creation of an almost countless multitude of kinds of the lower order of animals, and an immeasurable number of certain beasts, she limits herself to a certain extent in the creation of corresponding kinds of beasts of prey. Although she consigns this rich race of birds for the greater part to the lower animal world, she preserves the equilibrium between the plant-destroying and plant-protecting animals. Birds fulfil police duty in Nature; they check the over-increase of kinds; they limit the lower beasts to a moderation which is in the main no longer injurious to the vegetable world; in other words, they make the existence of the vegetable world, and through it, that of men, possible. That is their deep significance and their position in the harmonious arrangement of creation. In comparison to this, all else useful or injurious is, so to speak, unimportant. If they form in part an excellent material for human nourishment, if they furnish palatable eggs, useful feathers, &c., all this is hardly to be mentioned in comparison with their work in immeasurable destruction of vermin. With this is joined, and depends upon it, the entire form of this grade of birds; its great mobility and quickness, which enable it to fulfil its police duty, now here, now there, its sharp eye, its strong power of digestion even in smaller birds, which works so energetically that an insect-eating bird can generally devour daily its own weight of insects. Then the concealed and unnoticed in their lives, the great increase, &c.! Upon their destination as insect destroyers depends the native bent of their flight. When the insect world in the north sinks to its rest in winter to be concealed by its snow-cover, then most of the birds transfer their services to the south, and the remaining insect-eaters gather their gleanings in the larvæ, eggs and nests of the insects, in the beetles of the woods, and in the few flies and spiders which venture forth out of sunny clefts in the rocks.

WHAT MAKES A BUSHEL?—Last year we published this convenient and useful table; but, as some of our readers failed to preserve it, we republish it now at their request. It is well worth saving for reference:

Wheat, sixty pounds.
Corn, shelled, fifty-six pounds.
Rye, fifty-six pounds.
Oats, thirty-two pounds.
Barley, forty-six pounds.
Buckwheat, fifty-six pounds.
Irish potatoes, sixty pounds.
Sweet potatoes, sixty pounds.
Onions, fifty-seven pounds.
Beans, sixty pounds.
Bran, twenty pounds.
Clover seed, sixty pounds.
Timothy seed, forty-five pounds.
Hemp seed, forty-five pounds.
Blue grass seed, fourteen pounds.
Dried peaches, thirty-three pounds.—*Farmer's Home Journal.*

It should always be remembered that a cow which gives a very large quantity of milk, while the best for a dairy where milk is sold, may not be the best in a butter making dairy—that is, that quality as well as quantity is of importance.

Size of Farms. Fences,

In the neighborhood of cities, where land is high and the farms necessarily small, we shall have to adopt the soiling system, and this will do away with the necessity for inside fences. Where land is cheap, and where, consequently, it will not pay to soil animals. we shall have larger farms, and can then have large fields, and thus save considerable expense in fencing. A field of ten acres requires sixteen rods of fence per acre, while a field of one hundred acres requires only about five rods of fence per acre. I know you object to large farms. But I am at a loss to see how we are going to get along without them. The Pacific Railroad will open up millions of new farms, and we have already ten times as much land as we have people to cultivate it. If, by the aid of machinery, we can cultivate a large farm at a less cost per acre than a smaller one, and if there is vastly more land than there are purchasers, why should we depreciate the manifest tendency to larger farms? Depend upon it, as farmers' sons receive a better education, they will want to do a larger business. The profits from a fifty-acre farm, devoted to ordinary farm crops, and so managed that its productiveness is kept up from the farm itself, and not by the purchase of fertilizers or feeding stuffs, are not large enough to satisfy the necessities of an educated man. And I assume that he manages his farm to the best advantage. Prices are high enough for consumers, and the profits of good farming, on the whole, are as large as they ought to be for the good of the country. The business is a good business, and a respectable one, but such a man does not do enough of it to afford him an adequate support. This is not a popular doctrine, but it is true.

Of course an intelligent, educated man can make a good deal of money from fifty acres of land; but it will not be by ordinary farm crops managed in the ordinary way. It cannot be done by depending on the usual sources of fertility on the farm. A farm can be kept in a high state of productiveness from its own resources, but to do so we must sell a comparatively small portion of the crops grown. Three-fourths of all the crops must be consumed on the farm. Mr. Lawes' unmanured wheat-plot produces on the average fifteen bushels of wheat per acre every year. In other words, the natural resources of the land are capable of giving fifteen bushels of wheat per acre every year. If a crop of wheat was sown every third year, and during the other two years the land was in clover, which was all returned to the land, we *might* get thirty-five bushels per acre. But this is probably the limit of productiveness from ordinarily good land, that receives no extraneous fertilizing materials. By supplying manure, we could get thirty-five bushels every year,—at least the soil can be made capable of doing so, or of producing even forty or fifty bushels; but the season may be such that the plants cannot use their supply of food to advantage. As a general rule, however, we might expect to average thirty-five bushels per acre. In other words, we can by the use of purchased manure, get *every year* as large crops as we can get *every three years*, by depending on the natural sources of fertility. Liebig, with a flash of genius, saw this truth when he wrote "Ammonia is Time," long before Lawes and Gilbert demonstrated the fact by experiments.

This truth lies at the basis of High Farming. By fallowing and growing clover or other green crops, we can get all the ammonia we need to produce large crops of wheat. But it will take three or four years to do it. Those writers who sneer at "guano and oil-cake," and who recommend farmers to depend entirely on home resources do not seem to understand this matter, for most of them, at the same time, recommended small farms; while the truth is, if we adopt *slow* farming, we must have large farms, or we shall have small incomes. If we have small farms, we must farm *fast*, or, in other words, we must adopt High Farming. There is no escape from this conclusion. The only exception is in the case of new land that has been heavily manured by nature, and where the farmer depends on this accumulated manure for the first twenty or thirty years after clearing up the land. When this manure is used up, he must depend on the plant-food, gradually developed from the soil by tillage, on the ammonia and nitric acid furnished by rains and dews, and on what the soil and plants can absorb from the atmosphere. This is slow farming. And it is the kind of farming that must be generally adopted. It means, in its best aspect, summer and autumn-fallowing, growing a large area of clover and other crops for plowing under or consuming on the land, and raising large crops at long intervals. It is the kind of farming now generally adopted, ex-

cept that we do not work the land so thoroughly as we should, and do not give the soil time to accumulate a sufficient quantity of ammonia and other plant-food for the production of a large crop. We try to raise crops at too short intervals, consequently the crops are poor, and the profits small.

On the other hand, High Farming means underdraining, thorough tillage, irrigation, and the purchase of manures or feeding stuffs. It means well-bred animals and high feeding. It means soiling in summer, and roots in winter. It means large crops every year, and crops that can be turned into money. There is no summer fallow, and no ploughing under clover.—*American Agriculturalist.*

Sheltering Manure.

Mr. Editor: Every observing farmer must have noticed that all manure when exposed to the action of the atmosphere suddenly changes its complexion. This change indicates a physical deterioration of the mass produced by the volatilization of certain principles contained in the mass, and upon which the value of the same depends. The ammonia and carbonic acid generated by decomposition are volatile, and readily escape if not prevented by some substance which acts as an absorbent and fixer. Contact of the air with all the decomposing and putrescent substances, conduces to the rapid deterioration of the same and should not be permitted. When it is necessary to expose any article which it is contemplated to use for manurial purposes, to atmospheric action, it is well to cover them with loam or rich soil, or to sprinkle them liberally with gypsum, pulverized charcoal, or water in which copperas has been dissolved. Either of these, if timely applied, and in sufficient quantity, will effect a valuable saving. Every farmer should be provided with a shed, a covered pit, a cellar, or some other convenience for manufacturing and preserving manure. Such an arrangement enables the farmer to save the most valuable parts of the solid and liquid voidings of his domestic animals. All the refuse matters which accumulate about the house, barns, and other outbuildings, as well as a vast quantity of fecundated material from the fields and woodlands, may here be worked up to great advantage. Muck, mould, chip manure, forest scrapings, leaves and other plants, mosses, leather, chips, rags, the stale from various domestic fowls, soapers' waste, animal flesh, chips from the shoe manufactory, sawdust, spent tan, and the dust from the comb makers, are all capable of being converted into the food of plants and of contributing to the support and sustenance of crops. By mixing them with the excrement of the horned animals, horses, sheep and swine, they soon resolve themselves into a highly fecundating aliment, which acts favorably upon every variety of crop, and beneficially to every description of soil.

It has been computed by practical men that one cord of manure manufactured in this way and saturated with the urine of the animals, is worth one-third more than when made in the ordinary way and exposed unprotected to the air. Many farmers are sadly remiss in attention to this important subject. They forget the maxim, so widely taught in the great volume of nature, that vegetables, in order to feed us, must be fed themselves. This can only be done by manure, judiciously made and judiciously applied. I have found that by attention to these matters, very important achievements may be made in the way of sustaining crops.

But I an wearying you, and will now close, hoping that the few crude remarks here presented may operate as an inducement to others to present that which will be of still greater value to your agricultural readers, all of whom would no doubt be gratified to hear from them on this and other important subjects.—*Cor. Germantown Telegraph.*

Deep and Shallow Drainage.—I observe that after a dry summer, the fields drained five feet deep at thirty and forty feet apart, in stiff clay, do not discharge water through the drains so early in the season as those of thirty inches deep, at closer intervals. The reason appears to me to be obvious; the sixty inch drains take the surplus water from 5000 tons of earth, while the thirty inch drains only lay dry 3000. It is easy, therefore, to understand that when the autumnal rains come, the 5000 tons take longer to supersaturate than the 3000 tons. The deep drained lands have only commenced running to-day (Jan. 8th) after the recent heavy rains. Are not those extra 3000 tons more available for the roots of plants than the same quantity underdrained under the thirty inch drains? for the roots of plants descend several feet. One inch deep of earth gives over one hundred tons per acre.—*J. J. Mechi.*

Deep Culture in Relation to the Retention of Moisture in Arable Lands.

Deep digging, trenching and subsoil ploughing, says the Edinburg (Scotland) Farmer, are the means for preserving the moisture in the soil during heat and drought. There are not wanting many evidences that the several acts of husbandry stated under this head are advantageous on every description of land, even the most water-logged fields. But draining is a *sine qua non* in such fields, an operation that has been descriptively defined by Major McInvoy as "underground irrigation." "I consider," says he, "the most perfect system to be that which allows air and water to pass freely through the soil with their dissolving and fertilizing properties. Previous to draining and deep stirring, chemical action is very much confined to one stratum of soil—namely, where the air is neither excluded nor free, and where it is neither dry nor wet (speaking in common-place words.) Subsequently the laws of composition and decomposition have full play, and their effects are diffused throughout the whole mass of soil. In an essay published several years since, (for which the Marquis of Tweeddale offered a prize,) it was said "that in every instance drainage gave a decided advantage in the increase of temperature, except only in summer, when a heavy fall of rain was found to lower the temperature of drained land more than undrained," which is evidently an advantage to a hot, parched soil.

The writer subsoiled nearly 100 acres of a light, thin, incoherent soil, consisting of a small portion of black earth, with gravel and sand resting on a gravelly, open subsoil.—The subsoil plough, which was drawn by two horses in the track of the common plough, stirred the ground to the depth of twelve or fourteen inches. The weak point of the land so treated was its dryness, for even moderate heat and drought scorched whatever crops were grown; but we found the process beneficial, the crops more abundant and less liable to suffer from an arid atmosphere. The rain-water did not pass so rapidly away, and we ascribe this to the subsoil ploughing shutting up the grooves and channels through which the water has descended for untold ages.

For this explanation we have been several times taken to task by intelligent agriculturists, who affirmed that subsoiling opened the interstitial places for the more rapid descent of water. Such, we believe, is the result of the operation in retentive bottoms.

The pulverizing of the soil also contributes to the retention of moisture. We were in this point a follower of Jethro Tull, and it was the perusal of his writings that set us to work. He pronounced the opinion that pulverization was the one great idea of successful farming. When large cavities abound in land, plants suffer more in dry weather than with minute pores. This proposition seems to be self-evident, but it has often been disputed, as contravening a law of capilliary action, that the ascent of the water is in the inverse proportion of the diameter of the tube. Now, it cannot be denied that a fine division of the soil is analagous to small capilliary tubes; but one fact is fairly overlooked in this reasoning, namely, that the fine, small particles of soils compacted together, exclude largely the air atoms, and thus prevent the full evaporative powers that would otherwise rule and operate. It is said that, in digging a hole in the soil in dry weather, pounding down the excavated earth, and afterward returning it to the hole, more moisture is absorbed and retained than in the surrounding ground. This process we have brought to the proof, and found its truth amply verified in soils holding something less than their normal quantity of water, but in cases where moisture was redundant it was otherwise.

In the prevailing plan of draining soft flats forty or fifty years ago, we have undoubted evidence of the powerful action of evaporation. The shallow stone drains of eighteen inches proved an entire failure, so far as the removal of the surplus water was concerned. The great law of gravitation being counteracted by capilliarity, the soft flats remained nearly as moist as ever.—*Dixie Farmer.*

Insects injurious to vegetation, it is stated, can be destroyed by the application of a liquid composed of one part vinegar and nine parts water. The mixture should be applied to vines and plants with a garden syringe or water-pot with a fine nozzle.

The Rural World suggests, in view of the difficulty in getting pure annatto, that the best possible coloring matter for cheese would be to introduce into the dairy, say one Alderney to every twenty cows of other breeds.

Oxen For Farm Work.

The leading object in pursuit of any business is to accumulate wealth. In doing this it becomes necessary to economise in preparatory movements made in the commencement. In farming, one of the heavy expenditures is in motive power—the power that moves the plough, the wagon, the cart, the threshing-machine, the mower and reaper, the hay-rake, etc.

The motive power in common use is the horse, mule, and ox. For part of the farmer's work the horse or mule appears to be indispensible; but for the wagon, cart, or even the plough, the ox comes in strong competition with the horse. To begin with, there is less capital invested, less expense of food, less expense of gearing, less expense of shoeing. When unfit for work, either by age, accident or viciousness in fence-breaking, they can be fed off for the butcher.

If a farmer buys a pair of oxen for two hundred dollars and works them two or three years, or even longer, and feeds them off for the butcher, he can get back all his capital and sometimes more.

Many farmers raise and train their own oxen, which is the better way. At our agricultural fairs we see many calves trained to the yoke, as docile as pets. This we are glad to see, for we think all farm stock ought to be petted; it is the true way to keep them gentle and quiet. Oxen thus trained and kept on the farm become attached to the members of the family that use them, and seem to know just what you want them to do.

There is very little difficulty in training oxen to pull and go forward; but to push a load backwards requires a little strategy in the training. To do this put about half a load on a cart and drive where it is a little up grade and stop them; after standing a moment, hold a stick before them to "back;" with a little motion and repeating the work "back," they will soon understand your wishes and act accordingly. After giving a few lessons in this way, try them on level ground with the empty cart, and then with some load on the cart. By repeating these lessons frequently, without whipping, you will have them well trained to backing. Young horses or mules may be trained to back in the same way.

In training oxen, be careful to not overload them and they will not become balky. Another thing gained by not overloading is, they will learn to walk fast, which is a great matter, especially in ploughing.

We have frequently had oxen on our farm that would plough furrow for furrow with a pair of horses all day—would go either before or behind on the same land, and always keep up to time; and then the care and expense of feeding and gearing was so much less that we gave the oxen the preference.—*Am. Stock Jour.*

Summering Young Calves.

The first summer is the important one for calves. If they come through it in good, sound, thrifty condition, their future rearing is easy. If they get pot-bellied, out of shape, and stunted, a year will be lost in their development and growth, and they will never be so good as they would have been had they kept growing from their birth. The secret of success in raising calves is to keep them thrifty *from the very start.* Let them never get a check, and they will pay in the end for the extra care. A frequent mistake is to turn calves out to grass too early. They have to eat a large amount of succulent food, to supply to their unperfected digestive organs a sufficient amount of such nutriment as they can use, and they develop enormous paunches, out of all proportion to their frames. By frolicking they expend, in muscular waste, material that should go to help their growth, and by becoming overheated, they disarrange their entire systems. Later in the season, on stinted, drought-parched pastures, they are often as much starved by the want of food as they were earlier by the want of ability to make complete use of what they did eat.

Calves should not be weaned on grass, unless constantly with their dams, and receiving a bountiful supply of milk late into the season. Good rowen hay, (or cured *grass,*) which contains a large proportion of nutriment that the young stomachs can easily appropriate, and a liberal feeding, twice or three times a day, with skim-milk—withholding water, so that they will drink the more milk—is the best bill of fare for at least four months. At the end of that time, they may, unless the weather is excessively hot, be gradually accustomed to a short and fine pasture, until they will thrive on that alone.—*American Agriculturalist.*

Snails in Kentucky have learned to chew tobacco, and are rapidly diminishing the supply.

SUNDAY READING.

Depend upon it, my brethren, if time, and money, and speech, and thought, and position, and influence, are things for which a moral being like man must give account, that account must be given more fully, more searchingly for contact with the gift of gifts—the revealed truth of God. Most of us, indeed, have been cradled in it, more or less nursed and fed by it, from our youth up. But even to have met truth on our path in life once, once only, is to have entered on a new set of moral circumstances. It is to have passed from the condition of Tyre and Sidon to the condition of Chorazin and Bethsaida. It is to have ceased to be in the sight of Eternal Justice what we were, and to have become something that we were not. To have met truth is to have met one who cannot henceforth desert us forever, if she would, and who, if we suffer her not to aid and cheer us like the strong and tender friend that she is, will nevertheless not altogether leave us, even though she be driven for the present from our sight with quiet contempt and scorn, or with open violence and outrage. It is to have met one towards whom we may, alas! come to feel as towards a personal enemy, who dogs our steps through life, unveiling the well-known features at each crisis of difficulty and of sorrow, and who rises before us at the last with the stern visage and accents of an unwelcome phantom, to reproach us for not being what we might have been, to judge us for being what we are. For truth will sit in judgment, not simply on the throne of the universe, but on a private tribunal erected by conscience in the sanctuary of each single soul. If Christ were not coming visibly to judge us from the clouds of heaven, conscience would invest His spoken word with a judicial power; conscience would robe His message of loving kindness and mercy in the habiliments of justice; conscience would wring from her reluctant Judge the irreversible sentence, the sentence of the spoken word, upon those who have heard it, when the day of attention, and acceptance, and obedience has passed away.

Awake, then, thou that sleepest the sleep of indifference: arise! Indifference is a levity against which the solemnities of life and death utter their perpetual protest. Thou must look Revelation in the face; thou must give heed to a voice which speaks in the name of the Author of thy being; thou canst not for ever ignore the one subject which should ever have the deepest interest for thinking men; thou must in the name of reason and prudence, no less than in that of natural piety, banish the spirit of indifference with a "Get thee behind me, Satan."

Look well, my soul, into thy own breast, and see how much of the Pharisee thou findest there. Why dost thou value thy fair appearance in the eyes of others, before the real substance of virtue in thyself? Why art thou more affected at some petty observances, than the fundamental laws of justice and charity; or thinkest to atone to God for greater indulgences, by a scrupulous strictness in easy duties? Remember thy Lord's severe reproofs and faithfully examine thy own conscience. Dost thou not know that great things we ought to do, and not to leave the lesser undone?

We live in an age when men are fond of learning, almost to the loss of religion. Nothing will pass with our men of wit and sense, but what is agreeable with the nicest reason, and any man's reason is his own understanding. These mighty pretenders have no truer ground to go upon, than other men. They plead for right reason, but they mean their own reason. In the meantime, they take from us our surest guide, and religion suffers by their contentions about it.

The Pharisees minded what God spake, but not what he intended; they never distinguished duties natural from duties relative, that is, whether it were commanded of itself, or in order to something that was better; whether it were a principal grace, or an instrumental action; so God was served in the letter, they did not much enquire into His purpose, and therefore they were curious to *wash their hands*, but cared not to *purify their hearts*.

Intellectual attainments and habits are no security for good conduct, unless they are supported by religious principles; without religion, the highest endowments of intellect can only render the possessor more dangerous, if he be ill-disposed; if well-disposed, only more unhappy.

☞ Persons ordering Goods of our advertisers will confer a favor by stating that they saw the advertisement in the "American Farmer."

WORTHINGTON & LEWIS,
Publishers.

Baltimore Markets, July 29, 1869.

COFFEE.—Rio, 15¼a16¼ c., gold, according to quality: Laguayra 16a18¼ cts., and Java 22a23¼ cts., gold.

COTTON.—We quote prices as follows, viz:

Grades.	*Upland.*	*Gulf.*
Ordinary	30 a—	00
Good do	31 a—	00
Low Middling	33 a—	00
Middling	33¼a34¼	00

FERTILIZERS.—Peruvian Guano, $85; California $70; Redunda Island, $30; Patapsco Company's, $60; Reese & Co's Soluble Pacific Guano, $60; Navassa Guano, $30; Chesapeake Guano, $60; Flour of Bone, $60; G. Ober's (Kettlewells) AA Manipulated, $70; A do. $60; Ammoniated Alkaline Phosphate, $55; Alkaline Phos. $45; Baltimore City Company's Fertilizer, $40; do., Flour of Bone, $60; do., Ground Bone, $45; do., Poudrette, $25; Baugh's Raw-bone Phosphate, $56; Baugh's Chicago Bone Fertilizer, $48; Baugh's Chicago Blood Manure, $48; Maryland Powder of Bone, $48; Rhodes' Super-Phosphate, $50; Rhodes' Orchilla Guano, $30; Lister's Bone Super-Phosphate $55; Berger & Butz's Super-Phosphate of Lime, $56; Andrew Coe's Super-Phosphate of Lime, $60; Zell's Raw Bone Phosphate, $56; Zell's Super-Phosphate of Lime, $60—all per ton of 2,000 lbs.; Ruth's Challenge Soluble Phosphate, $60; Whann's Raw Bone Phosphate, $56. Pure Ground Plaster, $14.75 per ton, or $2.25 per bbl. Shell Lime slaked, 6c., unslaked, 10c per bushel, at kilns.

FLOUR.—Howard Street Super, $5.25a5.75; High Grades, $6.62a7.00; Family, $7.50 a 8.50; City Mills Super, $5.25a6.50; Baltimore Family, $11.75.

Rye Flour and Corn Meal.—Rye Flour, $5.75a6.00; Corn Meal, $5 25a5.50.

GRAIN.—*Wheat.*—Good to prime Red, $1 50a1.60; White, $1.50a1.75.

Rye.—$1.27a1.30 per bushel.

Oats.—Heavy to light—ranging as to character from 65a75c. per bushel.

Corn.—White, $1 10a1.13; Yellow, $1 10a1.15 per bushel.

HAY AND STRAW.—Timothy $24a26, and Rye Straw $23 per ton.

PROVISIONS.—*Bacon.*—Shoulders, 15¼a— cents; Sides, 18¼a19 cts.; Hams, Baltimore, 23a24 cts. per lb.

SALT.—Liverpool Ground Alum, $1.85a2.00; Fine, $2.70 a2.90 per sack; Turk's Island, 50 cts. per bushel.

SEEDS.—Timothy $5.00a—; Clover $9 00a9.25; Flax $2.55.

TOBACCO.—We give the range of prices as follows:

Maryland.	
Frosted to common	$4 00a 5.00
Sound common	5.50a 6.50
Middling	8.00a10.00
Good to fine brown	11 00a15.00
Fancy	17.00a30 00
Upper country	7.00a35.00
Ground leaves, new	3.00a12.00
Ohio.	
Inferior to good common	4 00a 6.00
Brown and greenish	7.00a 8.00
Medium to fine red and spangled	9.00a13.00
Fine spangled	12 00a25.00
Fine yellow and fancy	30.00a40.00

WOOL.—We quote: Unwashed, 30a33 cts.; Tub-washed, 45a51 cts.; Pulled 36a37 cts.; Fleece 40a45 cts. per lb.

CATTLE MARKET.—Common, $4 50a5.00; Good to fair, $6 00a7.00; Prime Beeves, $7.00a8.37½ per 100 lbs.

Sheep—Fair to good, 4a5½ cts per lb., gross.

Hogs—$12.75a13.50 per 100 lbs., net.

Wholesale Produce Market.

Prepared for the American Farmer by HUMES & Co., *Produce and Commission Merchants, 67 Exchange Place.*

BALTIMORE, July 29, 1869.

BUTTER.—Western solid packed 24a30 cts.; Roll —a—; Glades,—a—; Goshen, —a—; New York —; Franklin street 25; for regular lots.

BEESWAX—45a— cts.

CHEESE.—Eastern, 15a18; Western, 13 to 17 cts.

DRIED FRUIT.—Apples, —a—; Peaches, —a—.

EGGS—20 cents per dozen.

FEATHERS.—Live Geese, — to — cents.

LARD.—Western, 20; City rendered, 21 cts.

TALLOW.—11a12 cents.

POTATOES.—Old, —a— cts.; New $0.50a1.00 per bbl.

NEW ADVERTISEMENTS—AUGUST.

Fertilizers—Wm. Crichton & Son.
" John S. Reese & Co.
" R. J. Ruth & Co.
" George Dugdale.
" B. M. Rhodes & Co.
" E. G. Edwards.
Plants, Seed, &c.—E. J. Evans & Co.
" N. P. Boyer & Co.
" Thomas Pullen.
" E. Moody & Son.
" W. F. Heikes.
Small Fruit Instructor—Purdy & Johnson.
Commission Merchant—Frank Lewis.
Soap—Colgate & Co.
Bells—W. S. & J. H. Merriam.
Maps—J. T. Lloyd.
Episcopal High School—Rev. Wm. F. Gardner.
Agents Wanted—American Wire Co.

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Week's Wheat (White.)

Early Ripening, Hardy

AND VERY PRODUCTIVE!

We offer prime seed of this very early White Wheat, which we consider the most valuable variety of recent introduction, combining the hardiness and early maturity of the Mediterranean with the high flavoring quality of the best White Wheats. Its straw is stiff, protecting it against the Fly, and it succeeds well on land of moderate fertility, yielding from 25 to 45 bushels, according to soil and season.

PRICES:

1 bushel	(sack included)	.....	$4.00
2 do	do	do	7.50
10 do	sacks	do	36.00

We also offer a fine supply of FRENCH RED AND WHITE *CHAFF*, EXTRA EARLY JERSEY, ROCHESTER RED CHAFF, LANCASTER RED CHAFF, by the bushel and sack, and a number of other varieties in limited quantity.

Descriptive Priced Circular mailed FREE to applicants.

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BUDS of Golden Dwarf Peach and other fruits to spare in abundance Nurserymen, Dealers and Planters are invited to correspond for terms. Address (with stamp,)
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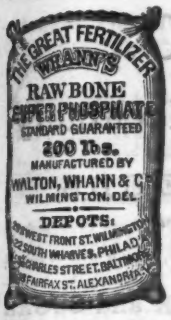

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MANUFACTURER OF

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In Glazed Stoneware.

ALSO—

DRAIN TILES.

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$10.00 PER DAY GUARANTEED

Agents to sell the HOME SHUTTLE SEWING MACHINE. It makes the LOCK STITCH, ALIKE ON BOTH SIDES, has the under-feed, and is equal in every respect to any Sewing Machine ever invented. Price $25. Warranted for 5 years. Send for circular. Address JOHNSON, CLARK & Co., Boston, Mass., Pittsburgh, Pa., or St. Louis, Mo.

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A superior lot of DRAIN TUBES and TILES sale at wholesale prices. Address

AMERICAN FARMER BUSINESS AGENCY,

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Cresylic and Carbolic Soap

AND

SAPONACEOUS COMPOUNDS,

☞ For Farmers, Gardeners and Stock Raisers, and for use in the Dwelling and Out Houses—comprising

Carbolic Disinfecting Soap, Cresylic Soft Soap, Cattle Plague Preventive, Foot Rot Ointment,

SHEEP DIP AND PLANT PROTECTOR,

No. 1, Laundry, Salt Rheum and Toilet Soaps.

From numerous RECOMMENDATIONS *of Cresylic Compounds the following are selected as being specially valuable:*

Five Points House of Industry, 155 Worth St.
NEW YORK, Nov. 15, 1867.

MESSRS. BUCHAN & Co.—*Gentlemen*—Some months since we purchased a large building, which had been used as a tenement establishment for thirteen years, and was occupied by some ninety families We tore away partitions, turning between three and four hundred rooms into less than one hundred. We found the walls and floors perfectly infested with vermin. We used freely, in cleansing, the CRESYLIC SOAPS manufactured by your firm, and with the very best results, as the bugs etc., have entirely disappeared. We propose to continue its use in cleaning our dormitories, hoping then to keep clear of a plague so common to all housekeepers in cities.

S. B. HALLIDAY, Supt.

BROOKLYN, November, 1867.

M. C. EDIT, *Agent for Sale of* JAMES BUCHAN & Co's, *Cresylic Soaps, &c.—Dear Sir*—We have had the Cresylic Soap used in the Raymond Street Jail and County Court House; and in washing and cleansing prisoners' clothing, cells, etc.; and we are so much pleased with its cleansing, disinfecting and insect-destroying effects, that we not only continue its use in above places, but recommend that it should be generally used for those purposes.

JOHN L. RYDER,
STEPHEN CLARK.
D. S. VOORHIES,
Committee on Jails of Supervisors of Kings County, N.Y.

CORPUS CHRISTI, TEXAS, March 15, 1868.

Messrs. JAS. BUCHAN & Co.—Gentlemen: Your Sheep Dip is wonderful in its effects. I have dipped 2150 head with nine month's fleeces on their backs. It is now three weeks since, and no scratching as yet. Your Dip is far superior to tobacco, not so disagreeable or unpleasant, much less trouble and more permanent.

I have used it on horses when diseased with a species of mange or itch, and it has the same good effect as on sheep. F. W. SHAEFFER.

BELTON, BELL Co., TEXAS, July 10, 1868.

MESSRS. BUCHAN & Co.—Gentlemen—The compounds of the cresylic acid sent me some months since, have been thoroughly tested by myself and neighboring flockmasters. All agree with myself that, as disinfectants and remedies to cure scab, kill screwworm and prevent its return, healing old gangrenous sores and wounds, killing and driving away flies, these preparations are without a rival, and *should be within reach of every stock raiser in Texas.*

Respectfully, H. J. CHAMBERLIN,
President Texas Wool Growers Association.

SOUTH KORTRIGHT, N. Y., Jan. 31, 1868.

MESSRS. JAS. BUCHAN & Co.—*Dear Sirs*—I have used your Cresylic Compound, or Sheep Dip, on some calves, and find it sure death to lice. Can confidently recommend it for destroying vermin. I think it gives the hair a glossy appearance, and shall use it on all my stock.

S. R.

American Agriculturist, April 8, 1868.

Lice on Cattle and Sheep.—The Spring is the season when most annoyance is caused by these parasites. We have so many letters, asking for and recommending cures that we are induced again to allude to that wonderfully effective destroyer of such vermin, Carbolic Acid. This is used in the form of soaps, which may be easily applied in water, making a moderately strong suds. Cresylic Acid is a cognite substance, almost always associated with carbolic acid, and under the trade-name of Cresylic Soap an excellent article is advertised and furnished. We have employed this soap to rid our shelves of ants, our cupboards of cockroaches, poultry of lice, dogs and cats of fleas, and not having any occasion to use it upon our horses or neat stock, have supplied acquaintances whose stables were infected. We have even prescribed a bath of Cresylic Soap and water for a newly arrived immigrant, and in every case of its application have had the satisfaction of learning of its efficacy. Farewell to mercurial ointment, that efficient but very dangerous article in careless hands. So long as we can obtain carbolic compounds we banish it.

The value of these compounds, for which Letters-Patent have been granted, is fully established as *Disinfectants, Antiseptics, and Destroyers of Insect and Fungus Life wherever found.*

Manufactured by JAS. BUCHAN & CO., New York.

For Sale at SOUTHERN AGENCY, No. 4 South st., BALTIMORE, Md.,

FRANK LEWIS, Agent.

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ORTON'S
Preparation

ESTABLISHED 1866.

The Appetite for Tobacco Destroyed!

LEAVE OFF CHEWING AND SMOKING THE POISONOUS WEED, TOBACCO!

One box of Orton's Preparation is warranted to destroy the appetite for Tobacco, in any person, no matter how strong the habit may be. *If it fails in any case the money will be refunded. It is perfectly safe and harmless in all cases.* It is almost impossible to break off the use of Tobacco by the mere exercise of the will. Something is needed to assist nature in overcoming a habit so firmly rooted. With the help of the Preparation, there is not the least trouble. *Hundreds* have used it who are willing to bear witness to the fact, that Orton's Preparation completely destroys the appetite for Tobacco, and leaves the person as free from any desire for it, as before he commenced its use. The Preparation acts directly upon the same glands and secretions affected by Tobacco, and through these upon the blood, thoroughly cleaning the poison of Tobacco from the system, and thus allaying the unnatural cravings of Tobacco. No *more hankering for Tobacco after using Orton's Preparation.* Recollect *it is warranted.*

The time taken to allay all desire for Tobacco by the use of the Preparation varies *slightly* in different persons, the *average* time being about *Five* days. Some have no desire for Tobacco whatever after using the Preparation Two days.

The *Health* and *Purse* of every Tobacco user in the country calls loudly, ABANDON THE USE OF TOBACCO.

RECOMMENDATIONS.

The following are a few selected from the multitude of recommendations in our possession:

We, the undersigned, hereby certify that we have used Orton's Preparation for the purpose of destroying the appetite for Tobacco, and can assure those who are suffering from this habit that Orton's Preparation will certainly destroy the appetite for Tobacco *quickly* and *permanently*, and without creating any bad effect upon the health, and without creating an appetite *either for the Preparation or any Substitute:*

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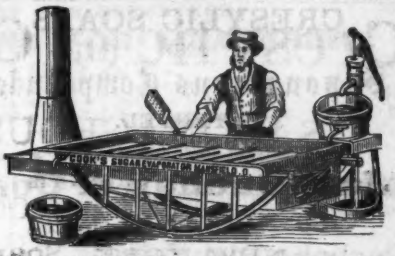
☞ *Beware of Counterfeits and all articles purporting to be like this, of the same name or otherwise. The great popularity of Orton's Preparation has induced unprincipled persons to attempt palming upon the public counterfeit and inferior articles. Purchasers will please order directly from the proprietor, or his duly authorized Agents.*

The price of Orton's Preparation is $1.00 per box, or six boxes for $5.00, sent by mail to any part of the country, *securely sealed from observation*, with passage paid on receipt of price.

How to Send Money by Mail.—Enclose the amount in a letter, seal carefully, register the letter and take a receipt for it of your Post Master. Money sent by mail as above directed at my risk.

Address E. DOUGLAS, Proprietor,
Box 1572, Portland, Maine.

july-3t PATENT APPLIED FOR.



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17,000 COOK'S EVAPORATORS are in use, and 10,000 VICTOR CANE MILLS, *all warranted.*

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Victor Cane Mill, (introduced in 1865,) First Premium at 37 State Fairs!

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All attempts thus far to equal these unrivaled machines by other contrivances, have

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Farmers can't afford to risk crops of Cane on Mills that BREAK or CHOKE, or Evaporators that do SECOND CLASS WORK and ONLY HALF ENOUGH at that.

"While scores of new fangled inventions have come up, had their day, and subsided, the "COOK" goes right along, constantly increasing in reputation."—PRAIRIE FARMER.

"Successful trial for years has given the COOK EVAPORATOR and VICTOR CANE MILL a decided reputation for superior excellence; we can heartily recommend them."—AMERICAN AGRICULTURIST.

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VICTOR GRAIN DRILL AND BUCKEYE THRESHER.

aug-2t

LISTEN TO THE MOCKING BIRD.—The Prairie Whistle and Animal Imitator can be used by a child. It is made to imitate the songs of every bird, the neigh of a horse, the bray of an ass, the grunt of a hog; birds, beasts, and snakes are enchanted and entrapped by it. Is used by Dan Bryant, Charley White, and all the Minstrels and Warblers. Ventriloquism can be learned in three days by its aid. Sent anywhere upon receipt of 25 cts.; three for 50 cts.; $1.25 per dozen.

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Packages of 1000. Manufactured of genuine Vuelta Abajo Tobacco of our own importation. A full flavored Havana Cigar. Well seasoned. Sample boxes of 100 sent by Express at $3, C. O. D., free of expense.

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Saponaceous Compounds,
PATENTED.

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And for sale by Druggists, Grocers, Seedsmen and Dealers.

For the first time available compounds of this acid are offered to the Horticulturist. They are so destructive of fungus and insect life, and so obnoxious to the latter, that both the Horticulturist and the Farmer will understand their value.

The Acid itself will not COMBINE with water, and if mixed mechanically and syringed upon plants, the water runs off, leaving the acid, which scorches and destroys the leaves. Hence the necessity for these Compounds, which not only spread freely over the leaf, but are lasting in its effects. The compound known as

PLANT PROTECTOR,

Is a soluble Soap, easily dissolved in hot water, to which cold water may be added until of the desired strength. For trees, and strong growing plants in open air, 5 lbs. of the PROTECTOR to 50 or 100 gallons of water will, as a rule, prove strong enough. For use in-doors a weaker solution will suffice.

Sold in	1 lb.	Canisters, at 50 Cents.
	3 "	" $1.00
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	50 lb.	Kegs, at 10.00

Larger packages put up, if ordered, and at less price.

Applied undissolved to the stems of young trees, it will afford complete protection from rabbits, mice, squirrels, &c.

Laundry and No. 1 Soaps,

For use in Scrubbing and in the Laundry.

Carbolic Disinfectant Soap.

For convenient use in washing horses, dogs, cattle, &c., destroying fleas and other vermin, and completely protecting from flies; curative of sores, scratches, and chafes of all kinds. 40 cents per lb.

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For curing scab, and destroying insects on Sheep. Put up in same form, and at same price as PLANT PROTECTOR.

FOOT ROT OINTMENT.

A certain cure for this dangerous pest, in 3 lb. Canisters, at $1.

CRESYLIC SOFT SOAP.

For floors, bedsteads, jails, hospitals, &c., where insects of any kind are troublesome, or where foul odors, or infectious and malarial diseases prevail. In same package and at same price as the PROTECTOR.

Also Staple Soaps of all grades.

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LARGE
WINTER HEAD
LETTUCE.

Messrs. M. O'Keefe, Son & Co., the well known and reliable Seed Importers, Growers, and Florists, Rochester, N. Y., having grown and thoroughly tested this new variety for the past three years, now offer it to the public as a FINE AND VALUABLE acquisition for both the market and private garden, as it is ready for use fully

THREE WEEKS EARLIER

Than any other variety of Lettuce, except that grown under glass. *It will stand the Winter without protection in the coldest of our Northern climates.* It forms very large, solid, exceedingly tender, greenish yellow heads, the outside leaves being of a brownish tinge. Orders for Seed will be received now, to be filled on August 1st, and thereafter, in regular rotation, by mail, in sealed packages, at 50 cents each, and can only be had GENUINE AND TRUE at their establishment. Order immediately of

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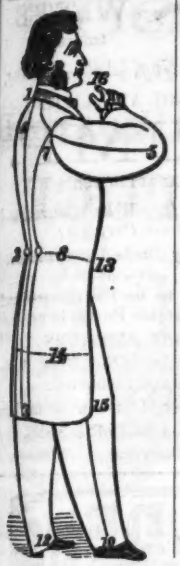
For further information address
E. C. RANDOLPH & CO.,
PIEDMONT LAND AGENCY,
jan-tf At either of the above named offices.



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Length.....from 1 to 2 and 3	Around the Waist under the Coat.....8
Arm.....4 to 5 and 6	Height ft. in.
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Length, from 1 to 13, with last two Coat Measures.

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Outside Seam from top of Waistband..10	Around the Waist under the Coat.....8
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Around the Neck under Cravat, 16, with all the Coat Measures.

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My cattle are pure-bred Short-Horns, and have them of all ages for sale.

Also Albemarle Improved Hogs, (a cross of Chester White and Kentucky Woburn,) better suited to rough fare, and the Chester White's the best, when well cared for.

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Super-Phosphate of Lime, Ammonia & Potash.
WARRANTED FREE FROM ADULTERATION.

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Double-Acting, Anti-Freezing,
FORCING AND LIFTING
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For Filling Tanks and Reservoirs, &c., &c.
Warranted to be the cheapest and most durable Pumps in use.
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NEAR ROSS STREET.
The undersigned is prepared to deliver on board of vessels, or at any railroad depot in the city.
☞ A liberal commission allowed merchants on orders.
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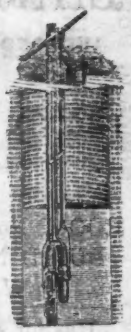

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THEY HAVE NO EQUAL.

We offer greater inducements to Churches and Clergymen than any house in Baltimore.

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MESSRS. H. SANDERS & CO.—*Gents:* The "ESTEY COTTAGE ORGAN" No. 34, with the Improvements, purchased of you last spring, comes fully up to your representations in its performances. It is a favorite from which we could scarcely be induced to part. JAS. A. DAVIS, *Prof. Nat. Sciences, Emory and Henry College.*

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Send for Catalogue of Lands.

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FRUIT GROWERS,
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Mr. S. L. Hyatt, of Huntingdon, Pa., writes: "I use my Steamer chiefly in the canning of fruit; it answers the purpose to my fullest expectation, * * * and would not be without one at double its cost."

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The Steamer is for sale by

EDMUND WOLF,
31 *Light street, Baltimore.*

Send for Circular. je 4t

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COLEMAN & ROGERS,

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Have a large and carefully selected stock of pure Drugs and Chemicals—also a large assortment of TRUSSES, Abdominal Supporters, Shoulder Braces, Eng. Bougies and Catheters, Suspensory Bandages, Gum Elastic and Glass Pessaries, Glass, Metal and Rubber Rectum and Vaginal Syringes, and Hyperdermic Syringes—to which they invite the attention of Physicians and the afflicted. Also the following

Natural Mineral Waters,

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Star Saratoga,	Rockbridge Alum,
High Rock Saratoga,	Healing,
Washington, (Chalybeate,)	Coyner's Sulphur,
Sharon Sulphur,	Seltzer,
Kissengen,	Empire Saratoga,
Greenbrier White Sulpher,	Gettysburg,
Augusta Alum,	Vermont Spring,
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je-3t Bedford Alum and Iodine.

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HORSE POWERS and THRESHERS, Improved RICE THRESHERS and FANS, FARM MILLS, for Grinding all kinds of Grain, PLOWS, HARROWS and CULTIVATORS.

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The only independent Tooth Rake in the country; each Rake has 20 Steel Teeth. Farmers and dealers would do well to send their orders early.

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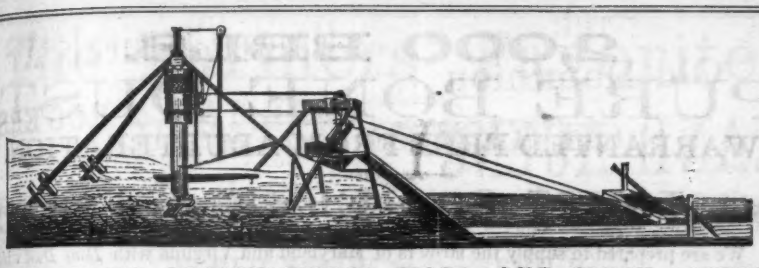

BRYAN'S AGRICULTURAL MARL AND MUCK LIFTER,

A STRONG AND DURABLE MACHINE, WHICH CAN BE WORKED BY ORDINARY FARM HANDS.

To Raise the Deposit from the Bottom of Ravines, Coves, Creeks, Rivers or other places inaccessible to teams.

It works with facility 170 feet from the capstan; will lift any marl clean of rocks, carting 125 to 150 loads a day.

The late M. Tilghman Goldsborough, Esq., of Talbot Co., Md., writing under date of 20th January, 1860, says in regard to this machine:

"I had it worked in the presence of several gentlemen, just to see the 'modus operandi,' and to be satisfied of the power and efficiency of the machine; and two mules of medium size appeared to have sufficient power to deliver on the shore a bucket full, equivalent to a cart load, in about six minutes. The mud at that trial was dropped on the creek bank. The mules were awkward and shy of the strangers present, and the hands were awkward at the novel occupation. We brought on shore about fifteen cart loads, and I feel entirely confident that I shall not be disappointed in the machine when it is put at full and regular work. Some of our farmers who have taken advantage of low tides and ice in the creeks to obtain small quantities of this mud, think it a very valuable manure; indeed that opinion appears to be universal here, but as the machine is of recent invention, and only a few have been erected, there has not been time to test the actual value of the mud as a fertilizer."

Having tested the machine, he writes under date of 27th July, 1860:

"Having successfully tested the working of your Mud Lifter, I have the further pleasure of testifying to the efficacy of the mud. You may remember that in December last, when the machine was first erected, we lifted some twenty loads of mud with it from the bottom of a salt water cove. This was acted on by the frost, and this spring was put on a point of thin land, in my corn field, where I never have had a vigorous crop of any sort, but now the land on which the mud was applied has a dark green, and vigorous growth of corn, entirely superior to the adjoining land, although the land undressed with mud is rather better, and both had the same dressing of shell marl. In this case the mud has had most unmistakably a profitable effect The land is a yellow clay loam."

For particulars, address

BRYAN & BROTHER,

Care of "American Farmer," Baltimore, Md.

july-

GLOBE MUTUAL LIFE INSURANCE CO.

No. 259 Broadway, New York.

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LORING ANDREWS, } Vice-Pres'ts.
J. A. HARDENBERGH, }
HENRY C. FREEMAN, Secretary.

Assets, Jan. 1st, 1860..... $1,641,907.55
Annual Income..... 887,287.40

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Losses paid amounting to $380,300.00.

The Superintendent of the Insurance Department of New York calls the President of this Company "that Experienced Veteran in the business of Life Insurance," to which, he is entitled, if being longest connected in the management of the business is sufficient title. He was the originator of the NON-FORFEITING system, under which there could have been NO WHOLESALE confiscation of SOUTHERN POLICIES by Northern Companies during the war.

The GLOBE makes no extra charge for Southern residence, and in case of death by BATTLE or DUEL, pays the NON-FORFEITING VALUE of its Policies, or returns all the premiums received.

Policies issued by this Company, by a special deposit with the Insurance Department, bear the official seal of the State of New York, which becomes responsible for the amount insured when required.

Policy Holders participate in the profits of the Company. The insured can travel at all seasons of the year to any part of the United States or Europe. july

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FINE WATCHES, DIAMONDS and FINE JEWELRY,

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TRIPLE SILVER PLATED WARE,

A full stock, Spoons and Forks, Cutlery, Clocks, Bronzes and Fancy Goods. Agents for Waltham American WATCHES, in Gold and Silver Cases. Watches Repaired. july-6t

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People's Fire Insurance Company of Worcester, Mass.
Fulton Fire Insurance Company of New York.
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2,000 BBLS.
PURE BONE DUST,
WARRANTED FREE FROM ADULTERATION.

JOHN S. REESE & CO.

We are prepared to supply the farmers of Maryland and Virginia with *Bone Dust* which we warrant and guarantee to be free from ADULTERATION.

This Bone Dust is not so fine as our Bone Flour, but sufficiently fine to prove active on the first crop. It is prepared in New Orleans for our sales.

We have every cargo subjected to careful chemical analysis, and thus avail of the proper means of protection for ourselves and our patrons.

JOHN S. REESE & CO.,

may-tf No. 10 SOUTH STREET, (*2d Floor,*) BALTIMORE, Md.

The Baltimore and Ohio Railroad.

On and after SUNDAY, Nov. 29th, 1868, three daily trains will be run between Baltimore and Wheeling and Parkersburg, as follows:

MAIL TRAIN will leave Baltimore daily (Sunday excepted) at 8.45 A. M. FAST LINE will leave daily (including Sunday) at 5.00 P. M. EXPRESS TRAIN will leave daily (except Saturday) at 9.45 P. M.

These trains connect at Bellaire and Parkersburg for all points West, Southwest and Northwest.

WINCHESTER ACCOMMODATION TRAIN leaves Baltimore daily at 4.00 P. M., (except Sunday.) Leaves Winchester for Baltimore daily (Sundays excepted) at 5 A. M., connecting at Frederick Junction with train for Frederick, and at Hagerstown Junction with train for Hagerstown.

THE ELLICOTT'S MILLS TRAIN leaves Baltimore at 6.40 and 10.00 A. M. and 3.30 P. M. Returning leaves Ellicott's Mills at 7.50 and 11.10 A. M. and 4.50 P. M.

FOR HAGERSTOWN.

Leave Baltimore at 8 45 A. M. and 4 00 P. M., connecting at Hagerstown Junction with Washington county Railroad, arriving at Hagerstown at 2.45 and 9 20 P. M. Returning, leave Hagerstown at 5.10 and 11 A. M., arriving in Baltimore at 10.35 A. M. and 4.45 P. M.

FOR WINCHESTER.

Leave Baltimore at 8.45 A. M. and 4.00 P. M., arriving at Winchester at 2.55 and 9 35 P. M. Returning, leave Winchester at 5 and 10.35 A. M., arriving in Baltimore at 10.35 A. M. and 4 45 P. M.

FOR WASHINGTON.

Leave Baltimore at 3.45, 7.00, 8.35 and 11 A. M., and 1.30, 4.30 and 8.30 P. M.

FROM WASHINGTON FOR BALTIMORE.

Leave Washington at 7, 8 and 9.30 A. M., and 12. 0. 2, 4, 5.40, 7.30 and 8.40 P. M.

FOR ANNAPOLIS.

Leave Baltimore at 7 00 A. M. and 4 30 P. M. Leave Washington at 7.00 A. M. and 4 00 P. M. Trains leave Annapolis at 6.30 A. M. and 3.45 P. M.

SUNDAY TRAINS.

Leave Baltimore for Washington at 3 45, 7 and 11 A. M. and 4 30 and 8 30 P. M. Leave Washington at 8.00 A. M. and 12.30, 4 00, 5.40, 7.30 and 8.40 P. M.

For further information, Tickets of every kind, &c., apply to J. T. ENGLAND, Agent, Camden Station, or at the Ticket Office.

JOHN L. WILSON, Master of Transportation.
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Edited by a Practical Horticulturist,
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WORLD RENOWNED PREMIUM

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WITH THE

IMPROVED GUANO ATTACHMENT AND GRASS SEED SOWER.

Patented April 22, 1856.

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Grain Distributor.

The Desideratum of Seeders!

Perfect in Mechanical Construction!

Perfect in its Performance of Work!

Sowing all grains, from the coarsest Marrowfat Peas to the finest kerneled, *with accuracy*. Thistle balls and dirt do not clog it. Seeding an even continuous stream through each tube; performing equally well up hill or down, side hill or level.

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No Liability to Get Out of Order or Broken!

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8 Tube Grain Drill	$85 00
9 " " "	90 00
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And other articles required by Farmers and Planters.

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Having no personal interest whatever in any of the above mentioned, we are enabled to make unbiassed selection, and we will purchase from such sources only as are believed to be entirely reliable.

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Full particulars of its manufacture, action and success, can be found in "The Farmers' and Planters' Magazine," distributed by my agents, or I will mail free, a copy to any one sending me their address.

Baugh's Raw Bone Phosphate can be had of dealers at all prominent points.

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aug-3t

Wheat Seeding 1869.

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ORCHILLA GUANO AA,

A TRUE BIRD GUANO—containing

PHOSPHATE OF LIME.....over 55 per cent.
PHOSPHATE OF MAGNESIA.....near 12 "

PRICE $30 PER TON—BAGS AND BARRELS.

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FLOUR OF RAW BONE.

We will give a money guarantee of the purity of this article. It is *unsteamed, unburnt bone*, reduced to the fineness of *Flour*.

100 lbs. contains 33 lbs. of *animal matter*, and *yields* 4½ *lbs. actual ammonia*, which is all that pertains to *raw* bone.

Bones subjected to *steam pressure lose* a large part of their *animal matter*, and hence their value is *greatly impaired*. When steamed, they can be made tolerably fine by ordinary means. They may be detected by their peculiar white appearance and the absence of *odor*.

100 lbs. Flour of Bone contains the value of 150 lbs. of *acid dissolved bone*, or Super-Phosphate, because *one-third* of properly dissolved bone is acid and water. *Flour* of *Bone* is as quick and active as Super-Phosphate or dissolved bone, and is consequently worth at least 25 per cent. more per ton. We recommend 250 lbs. per acre, where 300 *lbs. Super-Phosphate* or dissolved bone would be applied. The manufacturers are the patentees of the only known machinery by which raw bone can be reduced to the fineness of flour.

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